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Practical Pharmacy Edition

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Editorial

THE SECOND WAR CONFERENCE

FOR the second time since World War II placed new emergency problems and responsibilities on American professions, industries, and citizens, the secretaries and other representatives of the state pharmaceutical associations met in Washington in April to discuss Pharmacy's part in the war effort. Association leaders carry a great load these days. They must be prepared to give correct answers to their members' questions, to give sound advice on the interpretation of government orders, and they are often called upon to make important decisions on matters pertaining to the participation of the pharmacists of the country in various emergency projects. Thus it is decidedly worth while for these association officials to meet together to compare notes, thrash out mutual problems, and to receive authoritative information from representatives of governmental agencies for their guidance.

The program this year was built on the problems which have developed largely since the conference a year ago. It covered the personnel problem, the matter of supplies, the need for safeguarding the quality of drugs and medicines during the emergency, and several other subjects allied to these general topics.

Elsewhere in this issue there appears a comprehensive, authoritative report of the conference. Each speaker has approved the portion of the report which deals with his subject, so pharmacists can depend upon its accuracy of interpretation. The pertinent information developed by the conference might be summarized about as follows:

1. The personnel problem in the profession is serious and may be expected to become more critical in the face of the induction of several thousand more pharmacists and the lack of a satisfactory student deferment policy to provide replacements. Pharmacists will do well to study their operation and management programs to determine how they can be trimmed of unnecessary services in order to utilize their available personnel most effectively in the rendering of necessary pharmaceutical services.

2. Abuses of the Army Exchange Service are being corrected as rapidly as possible and this former problem may be dismissed as solved.

3. The new, proposed Maximum Price Regulation, being developed by the Office of Price Administration, is intended to simplify the pricing of new or changed products and will endeavor to carry over manufacturers' customary established policies of prices and discounts. OPA plans to set up an advisory committee for the drug trade to consider all-over problems affecting this field.

4. The War Production Board is doing its best to anticipate and prevent shortages of necessary drugs and materials, but the task is not as simple as it may sound. Although it is easy to say "speed up production," some of the newer synthetic drugs require a long list of raw materials, the production of each of which must be speeded up before the production of the needed product can be increased.

5. Every pharmacist has an obligation to make sure he has sufficient drugs and medicines available to meet the needs of his community. He should study the trend in prescription ingredients called for by

the physicians he serves, keep an accurate check on his stocks, watch out for the development of epidemics and other situations which might increase the demand for drugs and medicines, and keep the Office of Civilian Supply of WPB advised of any difficulties he encounters in obtaining necessary drugs, medicines, and health supplies. OCS is doing an excellent job of anticipating all-over, national needs, but pharmacists must anticipate their own individual, local requirements.

6. The Federal Food and Drug Administration has permitted new drug applications to become effective for nose drops containing sulfathiazole and for bandages impregnated with this drug. On the basis of present evidence, the Administration believes these products, if properly labeled, are safe for general use and over-the-counter sale.

7. The National Quinine Pool has met with excellent response from pharmacists, but not all have contributed who can. The need of the Army and Navy for antimalarial drugs is great and any pharmacist who has not as yet contributed his stocks of quinine and other cinchona derivatives should do so at once.

8. The development of civilian defense plans has shown the need for persons with chemistry training to act as reconnaissance officers in gas defense. Pharmacists are urged to offer their services in this capacity to the Senior Gas Officer of their respective community.

9. The Committee on Small Business of the House of Representatives is investigating OPA orders affecting little businessmen and may soon study WPB limitation orders in a desire to eliminate undue hardships.

10. The Pharmacy Corps Bill is expected to receive a favorable report by the House Military Affairs Committee within the near future. The support of pharmacists through letters and resolutions addressed to their Congressman is developing real interest in behalf of this legislation.

Throughout the two-day conference it was apparent that the profession of pharmacy is faced with a number of serious problems and that they will multiply in number and gravity as the war goes on. It was equally apparent, however, that this profession is prepared to tackle these problems fearlessly and do its best to solve them through their state and national associations. The ability of pharmacists to meet such problems has been evidenced during the past year and this experience provides confidence that today's and tomorrow's situations will be similarly met. During this period the need for strong organizations is more apparent than ever.

The benefits of the Washington Conference were not all on the side of pharmacy, however. The representatives of the government agencies who attended the meeting had the opportunity of hearing at first hand the problems of the pharmacist in Missouri, Utah, Kansas, and Vermont. Such contacts cannot fail to influence many of the decisions which these men will be called upon to make from time to time.

From the viewpoint of the government and the profession, both of which are akin in their desire to do everything they can to help win the war, the conference was a success.

THIRTY-FOUR STATES PARTICIPATE IN CONFERENCE ON WAR PROBLEMS

ASSOCIATION OFFICIALS HEAR SPOKESMEN FOR GOVERNMENT AGENCIES EXPLAIN THE PRESENT SITUATION IN REGARD TO SHORTAGES OF PERSONNEL, LACK OF SUPPLIES, NEW OPA CEILINGS, STATUS OF SULFA PRODUCTS UNDER THE FOOD AND DRUG LAW, NATIONAL QUININE POOL, PHARMACY CORPS BILL, AND SMALL BUSINESS COMMITTEE, AT TWO-DAY SESSION

ON April 3 and 4, at Washington, D. C., the secretaries and other officials of thirty-four state associations spent two full days, with sessions in the morning, afternoon and evening, considering the many serious problems now confronting pharmacists, how these problems can be met, and how pharmacy can contribute most effectively to the war effort and at the same time protect the civilian health and welfare. The representatives of the state associations were given the opportunity to receive the counsel and advice of governmental agencies and others in coördinating the personnel, facilities and activities of pharmacy in the war effort.

The meeting, which was the second annual conference of the group, was held under the auspices of the Conference of Pharmaceutical Association Secretaries in cooperation with the A. PH. A. and the N. A. R. D. The A. A. C. P. and the N. A. B. P. were represented by their presidents and other officials who took part in the proceedings.

Among the problems laid before the group were the demands of the armed services for personnel and the effect of these demands upon students and pharmacists in practice; the efforts of WPB to prevent shortages of pharmaceutical materials and the assistance desired by this government agency in anticipating and safeguarding civilian needs; the methods being exercised by OPA to control prices in the field of drugs and medicines as part of the government's efforts to prevent inflation; the work of the Food and Drug Administration in protecting the quality and safety of drugs and medicines during the emergency, with particular reference to new sulfa drug products; the collection of quinine and other antimalarial drugs by the National Quinine Pool; the efforts of the Army to prevent abuses of its Exchange System; the attempt to improve the quality of pharmaceutical services in the Army through the Pharmacy Corps Bill; and the interest of Congress in the general problems being considered by its Committee on Small Business.

Chauncey Rickard, President of the Conference, presided at this year's sessions, Roy Bird Cook, President of the A. PH. A. and John W. Dargavel, Secretary of the N. A. R. D., welcomed the secretaries, voicing the eagerness of their associations to aid in the solution of today's professional and economic problems and thanking the state organizations for their coöperation during the past year.

PERSONNEL PROBLEMS

The entire first morning of the conference was devoted to a discussion of the deferment status of pharmacists and pharmacy students and the resulting personnel problems in the profession.

Dr. E. F. Kelly, Secretary of the A. PH. A., described the efforts which have been made since last August to secure the deferment of sufficient pharmacists and pharmacy students to take care of civilian health needs. He estimated that by the end of 1942 approximately ten percent of the retail pharmacies of the country had been closed, largely as a result of the induction of about ten percent of the pharmacists of the country, and he urged that every state association keep up-to-date records of the withdrawal of pharmacists and the closing of pharmacies in their particular localities because the situation will become worse.

Dr. Kelly explained that Selective Service had issued bulletins classifying pharmaceutical services and the production of drugs and medicines as essential activities and making pharmacists engaged in these activities eligible for deferment. Teachers of pharmacy and research workers have likewise been classified as essential and eligible for deferment. He stated that the student deferment situation was far from satisfactory, only those students who have completed at least half of their training being eligible, and this limited deferment policy being only temporary until July 1, pending a further study of their status.

He explained that the Occupational Bulletins issued by Selective Service had been replaced by Activity and Occupational Bulletins and that their numbers had been changed. Occupational Bulletin No. 24, dealing with pharmacists engaged in the production of essential drugs and chemicals, is now Activity and Occupational Bulletin No. 17; Occupational Bulletin No. 44, devoted to Health and Welfare Services and covering pharmacists in practice, is now Activity and Occupational Bulletin No. 32. Occupational Bulletin No. 11, covering educational services, is now Activity and Occupational Bulletin No. 33 (-5 teachers, -6 students).

Dr. Kelly also outlined the negotiations now being carried on to secure a more adequate provision for the training of a sufficient number of pharmacy students.

DEFERMENT OF STUDENTS

Dr. Edward C. Elliott, Chief of the Division of Scientific and Technical Personnel of the War Manpower Commission, explained the failure of pharmacy to secure a satisfactory student deferment policy, on the following factors:

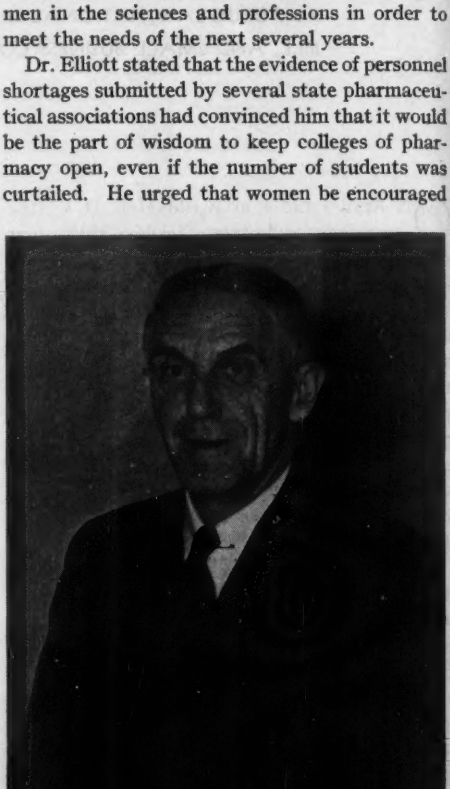
1. The general lack of public recognition of the pharmacist as a professional man who is necessary to the health and welfare of his community. Too many people feel that the pharmacist spends more time working with sandwiches than in professional duties. Commercial complications have made the pharmacist the "forgotten man" of science.

2. The concentration of drugstores in downtown areas of the larger cities, making it appear that there is an overabundance of pharmacies; the casual observer forgetting the far-flung sections of the country where pharmacies are ten miles apart.

3. No one has yet been able to prove conclusively, to the satisfaction of the War Manpower Commission, that there is a general, over-all nationwide shortage of trained pharmacists, or a potential shortage.

4. The conflicting viewpoints of those government officials who believe this will be a short war and that we should gamble everything on a quick victory, and those who believe it may be a long war and that we should maintain the training of men in the sciences and professions in order to meet the needs of the next several years.

Dr. Elliott stated that the evidence of personnel shortages submitted by several state pharmaceutical associations had convinced him that it would be the part of wisdom to keep colleges of pharmacy open, even if the number of students was curtailed. He urged that women be encouraged



Dr. Edward C. Elliott discussed the problem of personnel shortages as a result of the war.

to study pharmacy, but stated that the profession cannot look to women and "4 F's" to meet its personnel requirements.

He expressed the hope that the colleges of pharmacy would not be among the "unnecessary casualties" of the war, and urged that efforts be continued to secure a more satisfactory deferment policy for pharmacy students. He described the present partial deferment of pharmacy students as "a foot in the door that can't be closed until July 1."

It is unfortunate that the public takes the pharmacist so much for granted, and it is only when they cannot get a prescription filled that they realize the extent to which public health depends upon the members of this profession, said Dr. Elliott. The dependence of the public on the pharmacist has always been large, he added, and as the quantity of medical services to the public goes down as a result of the withdrawal of physicians to meet the needs of the armed services, the importance of the man behind the prescription counter goes up. The pharmacist is the "sentinel of public health," he said.

Dr. Elliott stated that attempts have failed thus far to have pharmacists' advisory boards to Selective Service officials recognized officially even though such boards were set up and functioning efficiently in several states. He expressed the hope that within the near future, the National Headquarters of the Selective Service System would recognize the importance of such advisory groups and would recommend their establishment in all states.

ARMY EXCHANGES

Col. Erwin M. Treusch, Director of the Legal and Liaison Division of Army Exchange Service, explained the details of the Exchange System maintained by the Army and described the efforts being made to prevent its misuse at the expense of civilian retailers. He stated that Exchanges had no advantage of priorities except on military necessities and that as a result of the correction of various past abuses, 85 percent of the civilian patronage of these outlets has been eliminated. He stated that in 1942 the total business done by Exchanges was less than ¾ of 1 percent of the total retail sales of the country.

Hon. Clyde L. Herring, Deputy Administrator of the Office of Price Administration, voiced the determination of his staff to carry out the legislative intent of Congress in all of its activities, and he asked the coöperation of pharmacists in the task.

OPA PROBLEMS

John J. Toohy, of the Chemicals and Drugs Branch of OPA, discussed the new, proposed Maximum Price Regulation for packaged drugs, frequently referred to as the "automatic pricing regulation," which is now close to completion.

"The General Maximum Price Regulation spread a big tent over prices in effect in March, 1942, at all levels on most commodities and services," said Mr. Toohy. "Numerous difficulties arose in the industry and in the OPA administration of problems relating to prices of new and changed drug products. There are wide differences in the nature of products having generally the same medicinal use. It was difficult to determine equivalent serviceability in the field of medicinal products. It was almost impossible to obtain any consistency in applying the conception of 'similar commodity' as used in pricing under Section 2 of the General Maximum Price Regulation, or the alternative pricing method under Section 3 of the General Maximum Price Regulation. Retailers pricing under 3 (*a*) were required to calculate prices that could not be determined under Section 2, and then file reports with the field office of OPA explaining the price determined. It placed a heavy burden upon retailers as well as the field offices and the national office of the OPA.

"In the field of medicinal products, there is a steady stream of new drug products. Also, the growing shortages in materials required a great number of variations in formula. Added to that, were many restrictions and shortages in the supply of available containers, with the result that there had to be a number of variations in the sizes of packages.

"A practical substitute for these pricing difficulties of Sections 2 and 3 of the General Maximum Price Regulation had to be found, and the solution to most of these problems is now incorporated in the proposed Maximum Price Regulation for Packaged Drugs. A similar, and closely parallel regulation has also been tentatively drawn for packaged cosmetics.

"In effect, then, we will have removed the pricing of practically all the packaged drugs from the big tent of the General Maximum Price Regulation and set them up, as it were, under a smaller

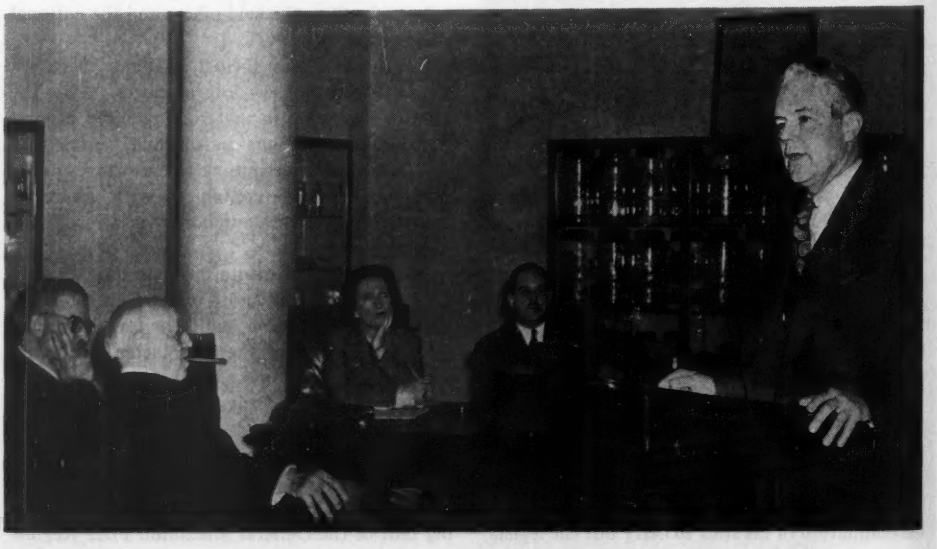
tent which especially fits the particular industry in which we are all interested. This regulation establishes maximum prices for sales of packaged drugs at all levels of distribution with the exception of those in which a specific price regulation has been issued by the Office of Price Administration. Sales of packaged drugs by a registered pharmacist on a prescription and the sale or dispensing of drugs by physicians to bona fide patients are excluded. Likewise, the regulation excludes the sales of botanical drugs, essential oils, and fine chemicals, but these remain under the General Maximum Price Regulation, or any other applicable regulation.

"All maximum prices determined by any seller under the General Maximum Price Regulation remain as they are and are carried over into the proposed regulation without change. A few other sections of the General Maximum Price Regulation are also enclosed by reference, such as base period records, price posting, and the section pertaining to Fair Trade Adjustments. Some packaged drugs which have been on the market and have been priced and sold by manufacturers may not have been sold by individual wholesalers and retailers before this regulation is issued. There are simple provisions which indicate how the so-called "new sellers" of "old" drugs may determine their maximum price for these packaged drugs in an easy and convenient manner with no calculations to make and no reports to file.

"The principal features of this proposed regulation for packaged drugs relate to the pricing of new packaged drugs, changed sizes of old drugs, and drugs in which changes in form or formula have occurred. The regulation establishes a method by which the manufacturer's prices for these new and changed packaged drugs are determined by the manufacturer according to the procedure outlined for new drugs or the type of change in question. Whenever he is pricing a new packaged drug or required to make a change in price, because of a change in the product or size, the manufacturer determines all of his own maximum prices on sales to all classes of his customers and reports the determination of his price to the Office of Price Administration in Washington. If the reported prices have not been disapproved within 20 days, the reported prices shall be considered approved, although they may be modified later, but not retroactively.

"In several instances, such as where a manufacturer has no comparable product, or where a substantial hardship is involved, the manufacturer sets forth a description of his problem and applies for maximum prices, but he can make no shipments until a price is established.

"Although I know you are not interested in my going into detail as to the automatic pricing of new and changed products as far as manufacturers are concerned, I might state that, generally, the manufacturer determines his maximum prices



John J. Tooky explained the new, proposed Maximum Price Regulation for packaged drugs.

for the new product, or for the changed product, on the basis of the comparison of unit direct cost and price for all classes of sellers which applied on the most comparable product. Let me use a simple illustration: Suppose the unit direct cost of the old product was 20 cents and the maximum price to a given class of customer was 60 cents. Then, if a unit direct cost of a new product is 30 cents, its maximum price to that same class of customer would be 90 cents.

"In addition to the establishment of maximum prices of new and changed products for each class of his own customer, the manufacturer will determine, according to the provisions of the regulation, and subject to OPA approval, maximum prices for wholesalers and for retailers of the new product if it is sold through wholesalers and retailers. The price level for wholesalers and for retailers would be correspondingly the same for the new as it was for the most comparable packaged drug. The proposed regulation then provides that where a price is established either for wholesalers or for retailers, the manufacturer will notify the wholesalers of the price applicable to them and to retailers, as well as to consumers, and, in addition, a manufacturer will publish a notification to the retail trade either in a periodical of national circulation to the trade, or directly to retailers by mail, if preferred.

"Another feature of special interest in the proposed regulation is that if a new or changed packaged drug is a proprietary medicine, or is a packaged cosmetic, the manufacturer will mark the maximum retail price as the retail ceiling price on the package, or on a label attached to it, for the new or changed product. Let me illustrate this point with regard to a proprietary medicine: Assume that a retail price of 50 cents had been suggested on the most comparable proprietary product; then on the new product, if it has the same unit direct cost, the retail ceiling price would be marked on the package at 50 cents. The manufacturer may have fair traded the old product at a price of less than 50 cents and would doubtless fair trade the new item at the same level but neither the fair trade price on the old, nor on the new is involved in this regulation.

"You are primarily interested in the question of the retail reseller's maximum prices under this regulation in so far as new and changed products are concerned. Although the manufacturer has established a maximum retailer's price on a new or changed product under the provisions of the proposed regulation, the retailer's maximum price will be that established by the manufacturer less any customary discounts and allowances that the retailer may have in effect on sales to his customers of the most similar packaged drug. An example of a customary discount is a discount to physicians, or hospitals, or other retailers.

"In general then, the proposed regulation carries over the prices already in effect, either by specific order or under the provisions of the General Maximum Price Regulation. It sets up procedures by which manufacturers can establish prices for new and changed packaged drugs at definite dollars and cents figures on the basis of the prices in effect on the most comparable product. From the established wholesale and retail prices on the new package, wholesale and retail resellers would apply their customary discounts and allowances in effect in March, 1943, on the most similar packaged drug."

Joseph J. Shine, secretary of the Illinois State Pharmaceutical Association, called Mr. Toohy's attention to the fact that retail pharmacists are today caught in a squeeze between rising merchandise costs and increasing overhead expenses, and rigid price ceilings on the merchandise they sell. He stated that the average, normal net profit of a retail drug store was about 5 percent of sales, and that since operating costs had increased about 5 percent of sales during the past year, many pharmacists were finding themselves in a difficult situation. He declared that pharmacists today were doing more business, but at less profit, than ever before.

Mr. Toohy, in reply to Mr. Shine, stated that, since the Retail Trades and Service Division of OPA, which formerly dealt with such problems, had been absorbed in another branch, pricing problems at all levels were on a commodity basis, but said that he understood OPA would set up an advisory committee for the drug trade to consider such over-all situations.

SHORTAGES OF DRUGS

Dr. John N. McDonnell, Chief of Research and Statistics, Drugs and Cosmetics Section of the War Production Board's Chemicals Division, discussed the problem of shortages of drugs and the steps which are taken to correlate the work of the various war agencies of the government in combating these scarcities.

He outlined briefly the function of each of the war agencies in the supervision over the importa-

tion of raw materials, production, and fabrication of medicinals, and the allocation and distribution of these commodities to the point of greatest need. He discussed in detail some of the shortages which had developed during the past year and summarized the situation in regard to important drugs, medicinal chemicals, biological products and pharmaceuticals.

While some of the "sulfa drugs" have been short, production of these important materials has been increased many times over. He stated that, since quinine has been limited for malarial use, the production of totaquine has been promoted in order that a satisfactory replacement will be available for civilian and export use. The synthetic anti-malarial quinacrine (atabrine) is now being manufactured in large quantities. Important botanicals such as belladonna, hyoscyamus, ergot, digitalis, and nux vomica are in good supply.

Dr. John N. McDonnell discussed the shortages of drugs and the steps being taken to combat these scarcities.

Such basic materials as citric acid, castor oil, phenol, and other materials are scarce and should be conserved. He stressed the fact that, while production of all essential important drugs was being increased manyfold, it was necessary for pharmacists to conserve their supplies. Such an increase in production is best exemplified by the "sulfa drugs" which have increased from a few thousand pounds total production several years ago to over 5000 tons in 1943. The synthetic vitamins also have been increased materially; and, while supplies are being allocated so that the Army, Navy, and Lend Lease, civilians, and export markets are receiving reduced quantities at present, in a few months there will be adequate production to meet all demands for both medicinal and food enrichment purposes.

Pharmacists do not realize the complexity of the task of increasing production of synthetics, he stated. The four important synthetic vitamins require over 125 raw materials for their manufacture, 75 of which are critical; and to produce one pound of one of these vitamins may require as much as 165 pounds of these raw materials.

How the druggists can help in the war program was indicated by the general principles of conversation such as a control of stock and prevention of over-buying; promotion of items using noncritical materials; saving of containers and wrapping materials; and the change-over from critical materials such as sugar, alcohol, and glycerin to other less critical materials.

Dr. McDonnell concluded his remarks with an appeal to pharmacists to give full coöperation to the programs set forth by the war agencies in order that the health of the civilian and military groups may be maintained at the highest level during the national emergency.

CIVILIAN REQUIREMENTS

Robert P. Fischelis, Chief of the Medical and Health Supplies Section, Office of Civilian Supply, of the War Production Board, discussed the work of his staff in assuring the civilian supply of necessary surgical supplies, drugs, and health items. He explained the importance of the pharmacist and the state pharmaceutical associations in this task, stating that the civilian is very much a layman when it comes to safeguarding his supply of medical needs. The average civilian can look out

for his own sugar, butter, and canned goods, said Dr. Fischelis, but he is not in a position to make sure his dentist has been provided with the necessary instruments to care for his teeth or that surgeons and hospitals are equipped for necessary operations, or to see that his pharmacist is supplied with adequate stocks of drugs to fill his needs. The civilian must depend upon the professions to be prepared to render health services as they are required, and this means the pharmacist must assume the responsibility for maintaining an adequate stock of drugs and medicines in his community. Pharmacy must speak and act for the civilian in the matter of supplies of drugs and health needs, he said.

Dr. Fischelis explained that there are five claimants for commodities: the Army, the Navy, the Lend-Lease Administration, the Board of Economic Warfare, and the Office of Civilian Supply. Each agency keeps an accurate check of its needs and when a commodity is under consideration, each group estimates the quantity it will require for a given period. If the amount of the commodity being manufactured will cover the combined needs, the condition is satisfactory, but if there is not enough being produced to meet the needs, WPB must either direct the increased production or must allocate the supply to the five agencies in proportion of their needs. He stated that it is erroneous to believe that this country is contributing all of the excess production to meet the needs of the United Nations since several foreign countries are supplying our armies abroad with many commodities which they manufacture.

The American civilian will not get his fair share of the drugs and medicines he needs unless the Office of Civilian Supply is kept constantly advised of the needs of pharmacists and of such difficulties as are encountered in obtaining supplies, said Dr. Fischelis. He urged that pharmacists make checks from time to time of the ingredients of 1000 consecutive prescriptions they fill and make such statistics available to the OCS in order that this agency may be prepared to project requirements on the basis of the current prescribing habits of physicians.

Dealing with specific problems which have developed recently, Dr. Fischelis called attention to the increase in meningitis cases and stated that sulfadiazine had become the general treatment of choice for this disease and, consequently, the production of meningitis serum had

Dr. Robert P. Fischelis explained the work of the Office of Civilian Supply in assuring that civilian needs for essential items will be satisfied.

fallen off and some pharmacists might find it difficult to obtain this serum if a physician should want it. However, if the need is urgent, a way will be provided to meet it. He urged greater participation in the National Quinine Pool, expressing the belief that there are at least one million ounces of quinine and other cinchona derivatives in retail, wholesale, and manufacturers' stocks around the country. He remarked that public health authorities predicted a possible epidemic of influenza in the future, and said that provision had been made for this eventuality, enough drugs being provided to cope with an epidemic that would strike as high as one-third of the people of the country. Dr. Fischelis urged that state pharmaceutical associations receive the weekly reports of the U. S. Public Health

Service in order to keep a check on the spread of various diseases and to advise pharmacists to govern their stocks of drug supplies accordingly.

SULFA DRUGS IN BANDAGES AND NOSE DROPS

A. G. Murray, Senior Chemist of the Federal Food and Drug Administration, addressed the meeting to clarify the "dangerous drug" provisions of the federal law as they apply to the sale of sulfa drugs in bandages and nose drops.

"One of the first public notices issued by the Administration following the enactment of the new law was one to distributors of sulfanilamide and related drugs in which it was stated that it was the consensus of qualified experts that these drugs when used otherwise than under expert direction are dangerous, being capable of causing serious injury, even death," said Mr. Murray. "Since the law specifically forbids the sale within its jurisdiction of dangerous drugs, the opinion was expressed that the indiscriminate distribution of the sulfonamides for self-medication would violate the provisions of the law.

"Sulfanilamide was on the market at the time this legislation became law. It was therefore not a 'new drug' as that term was defined in the law. Sulfapyridine, sulfathiazole, sulfadiazine, and various other drugs in the sulfonamide family were originally new drugs, requiring the filing with the Administrator of applications, including evidence of their safety under the conditions of their intended use, before they were marketed. Many preparations of them are still considered new drugs. Applications for a considerable number of these drugs and of various preparations containing them have been filed and have become effective. For the most part, because they have harmful potentialities, especially in the hands of those not skilled in their use, these items have been labeled in such a way as to restrict their legitimate sale to prescription channels. Recently a manufacturer of finger bandages of the type now official in the Pharmacopœia under the title 'Adhesive Absorbent Gauze,' but impregnated with a small amount of sulfathiazole, filed with the Administrator an application for the article to be distributed indiscriminately. After consideration of the data supplied with reference to the safety of the article, the application was allowed to become effective solely because there was no available evidence that this particular article is unsafe. The bandages have therefore been placed upon the market, as you perhaps already know. They are no longer considered new drugs.

"Applications for nose drops containing sulfathiazole labeled for general use also have become effective. These articles bear upon their labelings appropriate warnings against misuse. Articles of this nature are still considered to be 'new drugs' and before any manufacturer places one of them on the market he should file with the Administrator an application setting forth the composition of the article, the directions for use and warnings its labeling will bear and the evidence of its safety.

"While the evidence at present available indicates that use of such articles will not be harmful, this is no assurance that evidence to the contrary may not appear at some future time. We have constantly in mind the history of aminopyrine, the danger potentialities of which were not recognized for many years after the article had been extensively distributed and consumed. I have no doubt that many deaths actually caused by aminopyrine were reported in death certificates as due to infections of various types.

"If evidence of danger to health from the use of finger bandages impregnated with sulfathiazole or of nose drops containing that ingredient should be developed, new drug applications for such articles would be cancelled or other appropriate steps taken to effect discontinuance of their sale under conditions inimical to the public health.

SULFA OINTMENTS

"Whether or not ointments containing one or more of the sulfonamides can be formulated and labeled so that they will be safe for use in self-medication is a subject of current consideration. The factors involved include the compositions of the articles, the conditions for which they are offered, the area of the body over which they may be used, the absorbability through the skin, and the frequency and duration of application specified or suggested in the directions for use in the labeling. I am not prepared to predict what conclusion will be reached with reference to this particular type of preparation. It is possible that satisfactory evidence of safety of any ointment containing a sulfonamide cannot be adduced.

"The general statements which have been issued by the Food and Drug Administration from time to time, both in public announcements and

in private correspondence, relating to the restriction on the distribution of the sulfonamides are obviously subject to some exceptions. The number of the exceptions may increase or may decrease as experience accumulates. The determining element upon which a preparation of any of these drugs is or is not to be distributed indiscriminately is its safety. This element must be determined for each individual item. Generally speaking, retailers have a guide in the labeling. Each article which bears the so-called 'Prescription Only' legend upon its label should be restricted in its sale to prescription channels. Where this legend does not appear and the package bears adequate directions for use, the article ordinarily may be considered as appropriate for indiscriminate sale. Of course, it is expected that the retailer will use good judgment in this matter and not sell over-the-counter the sulfonamide drugs under conditions not demonstrated to be safe, particularly those preparations intended for internal use, even though the manufacturer may have neglected to place the 'Prescription Only' legend upon the label.

"While probably your group is not directly interested in veterinary medicine, I may mention that the Administration has expressed the opinion that the sulfonamide drugs intended for administration to the lower animals and conspicuously labeled as for that purpose only need not be restricted in their sale to prescriptions."

NATIONAL QUININE POOL

The state pharmaceutical association secretaries visited the headquarters of the National Quinine Pool and saw the method of handling the individual contributions of pharmacists, and their preparation for shipment for reprocessing.

Charles R. Bohrer, Assistant to the Secretary of the A. PH. A., reported that 7868 packages have been received and opened thus far. Since 1200 additional pharmacists participated in the test pool of the Philadelphia College of Pharmacy and Science, a total of 9068 packages have been opened, and many more pharmacists have contributed their quinine. At the present time, 63,542 ounces of cinchona derivatives have been pooled at Washington. The average contribution of quinine has been $6\frac{1}{2}$ ounces per pharmacist, and since only about 40,000 pharmacies in nonmalarial areas were expected to participate in the pool, Mr. Bohrer expressed the belief that the National Pool would collect between 100,000 and 240,000 ounces.

Mr. Bohrer urged that state pharmaceutical associations renew their appeals for quinine, stating that the contributions from various states ranged from 6 packages to 1009 packages.

Turner Currens, of the War Production Board, emphasized the need for cinchona derivatives and paid tribute to the pharmacists of the country for the manner in which they are taking part in the Quinine Pool. He stated that the government was taking over surplus stocks in the hands of wholesalers and manufacturers as rapidly as possible.

Mr. Currens revealed that, in order to meet emergency requirements, the production of Atabrine had been increased to cover the anticipated needs of 1943, that totaquine production was being expanded as much as possible, and that steps were being taken to promote the collection of cinchona bark in South America.

PHARMACISTS IN GAS DEFENSE

Dr. H. van Zile Hyde, Acting Chief of the Field Casualty Section, Office of Civilian Defense, expressed the appreciation of OCD for the cooperation rendered by organized pharmacy during the development of civilian defense plans, and he outlined the many steps which have been taken during the past two years to prepare for the care of civilian casualties in emergencies.

Dr. Hyde warned that there was considerable danger of air attacks and, with the enemy becoming more and more desperate as a result of military reverses, there is a strong possibility that gas may be used as a weapon to disorganize the civilian population. He stated that it was not advisable to provide cleansing stations to take care of all the people who might be involved in a gas attack, but that the public should be taught self-aid, which consists of prompt removal of clothing followed by washing affected areas with soap and water, and the taking of a complete shower after suspected exposure to gas. Because the thought of a gas attack alarms civilians unduly, and because there have been false reports of the use of gas in practically every air raid in Great Britain, Dr. Hyde said that Civilian Defense authorities are organizing trained reconnaissance officers in every community to identify the various gases used in warfare. For this important duty local defense officials need men with

chemical training and are utilizing chemists from industrial concerns, teachers of chemistry, and pharmacists. He urged members of this profession to offer their services to the Senior Gas Officers of their communities and to take such training courses as are necessary to qualify them for the work.

CONGRESSMAN PATMAN SPEAKS

Hon. Wright Patman, Congressman from Texas, discussed the efforts of Congress to make provision for small manufacturers under the stress of the emergency and expressed the opinion that similar assistance should be extended to small retailers to help them weather the period. He explained his Bill to permit small business men to get together and pool their purchases of merchandise, and said he was considering the advisability of inventory control to require manufacturers to continue selling the same percentage of their available goods to small concerns as they sold during normal times. He outlined the work of the Small Business Committee of the House, of which he is chairman, and announced that it had decided to conduct an investigation of all orders affecting small businessmen which have been issued to date by OPA. He suggested that the Committee would soon investigate the limitation orders of WPB which are so vitally affecting small business enterprises.

PHARMACY CORPS BILL

Hon. Carl Durham, Congressman from North Carolina, explained the Bill to establish a Pharmacy Corps in the U. S. Army, and forecast that he felt it would receive a favorable report by the House Military Affairs Committee within the near future. He stated that pharmacists had never had the opportunity to contribute their services most effectively in the Army, and he said that the Pharmacy Corps Bill, if enacted, would firmly establish this profession in the armed forces on a permanent basis.

He expressed the belief that the establishment of a Pharmacy Corps would solve many of the personnel problems which the pharmacists now face, especially in the training of an adequate number of students to furnish the required replacements.

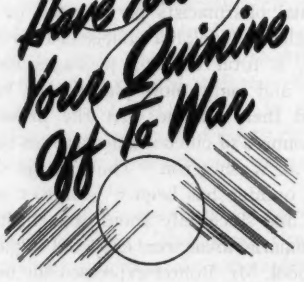
Congressman Durham explained that the many very important matters now before his Committee and the Congress made it impossible to secure as prompt consideration and action on the Bill as would have otherwise been the case. He congratulated the pharmacists of the country on the splendid support they have given the Bill, as illustrated by the interest that members of Congress are expressing to him, and he gave assurance that he and the members of the Steering Committee were keeping in close touch with the situation and would secure action as promptly as possible.

Dr. H. Evert Kendig, Chairman of the Joint Committee on Pharmacy Corps, representing the A. PH. A., A. A. C. P., N. A. B. P., and N. A. R. D., who had planned to submit a full report of the progress so far made, was unable to be present on account of illness.

DISCUSSIONS

Saturday evening and Sunday afternoon were devoted to discussions of the subjects on the program and the information brought to the conference by the various speakers. Consideration was also given to such matters as the advisability of holding 1943 conventions, state legislation, public relations, and the steps which pharmacy should take in the war effort.

It is believed that such conferences are distinctly worthwhile because they give state leaders authoritative information on the work of governmental agencies and also give officials of the government the benefit of the advice of the representatives of pharmaceutical associations.



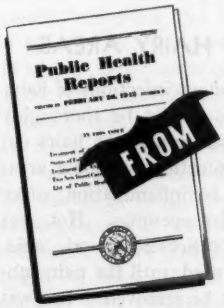
PUBLIC HEALTH SERVICE SUGGESTS
FORMULAS FOR FUNGUS INFECTIONS

PLACE THIS INFORMATION BEFORE THE PHYSICIANS IN YOUR COMMUNITY IN ADVANCE OF THE SUMMER ATHLETE'S FOOT SEASON

THE plant organisms causing fungus infections live on the dead layers of the skin known as keratin tissue. Unless immediately checked, however, the dermatophytes causing the infection sooner or later come into contact with living tissue and may sensitize the individual, causing manifestations of the infection in other parts of the body. These secondary eruptions are allergic responses of the body to either the fungus itself or products of the fungus, and are known as dermatophytids, or "ids," for short.

In some types of fungus infections it is possible to desensitize the individual by the intradermal injection of an extract prepared from the fungus casing the condition. A trichophytin extract is available for trichophyton infections which commonly cause athlete's foot and other fungus infections of the skin.

In all cases it is essential to ferret out the focus of the infection and cure it in order to cut off the source of sensitization and thus clear up the secondary eruptions. In cases which do not respond to treatment promptly it is necessary to identify the fungus causing the infection, either by direct examination or culture.



In *Public Health Reports* for February 26 (58:9, 337–345), Dr. Louis Schwartz, Medical Director, and Dr. Samuel M. Peck, Surgeon, of the United States Public Health Service, present formulas for a number of new preparations for the treatment of superficial fungus infections of the skin. In their paper, representing a contribution of the Dermatoses Investigations Section of the Division of Industrial Hygiene of the National Institute of Health, the authors list the most common fungus infections as follows:

(1) *Tinea circinata*, a spreading, scaly infection which attacks hairless skin.

(2) *Tinea cruris*, also known as *Eczema marginatum* because it often resembles eczema. This may be severe; it attacks the thighs and groins.

(3) *Erythrasma*, a comparatively mild infection which usually is found in the axilla.

(4) *Tinea versicolor*, a general skin disease which appears as brownish yellow spots which tend to coalesce to form extensive areas of eruption.

(5) Dermatophytosis of the feet, the so-called "athlete's foot."

TINEA CRURIS AND CIRCINATA

Tinea cruris is usually caused by *Epidermophyton floccosum* or by *Trichophyton rubrum*, the latter being one of the most resistant fungi to treatment. This infection requires vigorous treatment. Since there is likely to be maceration of the skin in the groin and other area where it develops, ointments should be used only at night; liquids or powders being used during the day. *Tinea circinata* may be caused by some species of Trichophyton or of Microsporum, and it is treated in the same way as *Tinea cruris*. The authors suggest the following formulas:

℞ 1

Thymol	1.
Salicylic acid	3.
Benzoic acid	5.
Lanolin	
Petrolatum, *aa*, *q. s.*	100.

This ointment should be used cautiously. It approximates about 1/2 strength Whitfield's Ointment with the addition of thymol which has been demonstrated to be of value in fungus infections.

℞ 2

Salicylic acid	
Boric acid, *aa*	5.
Thymol	1.
Iodine crystals	1.
Alcohol, 50%, *q. s.*	100.

Paint on twice a day and cover with a dusting powder.

℞ 3

Sodium propionate	10.
Salicylic acid	3.
Menthol	
Phenol, *aa*	1.
Alcohol, *q. s.*	100.

This is much milder in action than ℞ 2.

℞ 4

Gentian violet	0.3–0.6
Distilled water or alcohol, *q. s.*	30.0

This preparation is useful for its drying effect and in the treatment of monilia infections.

℞ 5

Salicylic acid	
Zinc stearate	
Boric acid, *aa*	5.
Powdered talcum	75.
Starch, *q. s.*	100.

This is a typical formula for a dusting powder with some fungistatic value. It may be used for prophylaxis.

℞ 6

Sodium pentachlor phenate	0.1
Benzoic acid	5.0
Zinc peroxide	30.0
Boric acid	5.0
Talc	50.0
Kieselguhr, *q. s.*	100.0

This dusting powder is more fungistatic than ℞ 5. It may be used for prophylaxis.

ERYTHRASMA

This infection, usually caused by *Actinomyces minutissimus*, does not require as vigorous treatment as the two preceding conditions. A thorough cleansing with soap and water and the use of mild peeling antiseptics usually are sufficient to effect a cure. The following preparations serve well:

℞ 7

Salicylic acid	3.
Alcohol, 50%, *q. s.*	100.

℞ 8

Salicylic acid	2.
Resorcin	3.–5.
Alcohol, 50% *q. s.*	100.

Use twice a day.

TRICHOPHYTON RUBRUM

Infections caused by *Trichophyton rubrum* are extremely resistant to treatment and require vigorous methods. The authors suggest the use of the following preparations:

℞ 9

Thymol	1.
Salicylic acid	6.
Benzoic acid	10.
Lanolin	
Petrolatum, *aa, q. s.*	100.

Use twice a day. Irritation may result.

℞ 10

Chrysarobin	0.1–0.5
Petrolatum, *q. s.*	100.0

Use with caution and keep away from the eyes. Make fresh. Do not use in the groin nor near mucous membranes, especially the conjunctivæ, as marked irritation may result.

NAIL INFECTIONS

Among the most difficult cases of fungus infections of the skin to cure are those of the nails. The fungi may grow through the entire thickness of the nail, which must be either removed or gradually scraped down. A conservative treatment, suggested by the authors, consists of daily scraping the nail with a file or with sandpaper and the application of ℞ 9, 10, 11 or 12. The scraping of the nail must be carried down deep enough to make sure that all of the infected parts are thoroughly removed. X-ray treatments are sometimes beneficial.

TREATMENT OF HAIRY AREAS

In the treatment of fungus infections of hairy areas, the affected parts should be thoroughly cleaned with soap and water and the hairs cut as short as possible. Infections of these areas are usually accompanied by inflammation; often with pus at the follicular openings. Hot, wet dressings of Vleminckx's Solution, boric acid, or Burow's Solution are used until the pain subsides and the crusts can be removed. The wet

dressings may be applied for several hours or even longer, several times a day, and between dressings an antiseptic ointment such as ℞ 9, or the following, may be used.

℞ 13

Ammoniated mercury	1.–3.
Petrolatum, *q. s.*	30.

℞ 14

Iodine crystals	0.6
Goose grease, *q. s.*	30.0

℞ 15

Oxyquinoline sulfate	0.5
Benzoyl peroxide	10.0
Thymol	0.5
Eucalyptol	0.5
Petrolatum flavum Anhydrous lanolin, *aa*, *q. s.*	30.0

This ointment is most effective when it is made fresh. It is a good antiseptic ointment for all sorts of infections of the hair follicles. Quinolor Compound Ointment (Squibb) is also very effective in such infections.

ATHLETE'S FOOT

Athlete's foot is the most common of the fungus infections of the skin. It is usually caused by one of the species of *Trichophyton*, and sensitization of the body is frequent, the most common associated infection being dermatophytids along the sides of the fingers.

The usual case of athlete's foot passes through three stages: (1) an acute stage with weeping vesicles, swelling, redness; (2) a subacute stage in which the objective is to get rid of the dead skin left from the dried up vesicles; and (3) a chronic stage in which the disease hangs on with small patches of recurring vesicles and seems to resist attempts to clear it up completely.

In the acute stage the infection must be treated with mild methods as too vigorous a treatment may kill the fungi so rapidly that their toxins will spread throughout the body and intensify the secondary "id" infections on the hands and elsewhere. Foot baths of 1/2 percent solution of Liquor Cresolis Compositus, U. S. P., a hot, 1:8000 potassium permanganate solution, boric acid solution, or Burow's Solution, for 15 minutes at a time, 2 or 3 times a day are suggested for the treatment of this stage. Continuous wet dressings may be used if necessary. Between foot baths, a foot powder such as ℞ 5 or ℞ 6 should be used. When there is a secondary infection with a pustular element present, wet dressings of 0.125 percent or 0.25 percent silver nitrate are suggested. If there is a great deal of weeping and oozing, a 5 percent aqueous solution of tannic acid may be used.

In the treatment of the subacute stage a keratolytic and antiseptic preparation is indicated. ℞ 1 can be used at night or in the day time, or ℞ 2 and ℞ 3 can be used, and followed by foot powder ℞ 5 or ℞ 6. A morning foot bath of potassium permanganate or Liquor Cresolis Compositus is sometimes desirable. As the condition improves it is usually necessary to use only an ointment at night and a foot powder in the morning. If there is more of an eczematoid stage, a mild tar ointment in a vanishing cream base, such as the following, is extremely helpful.

℞ 16

Salicylic acid	5.
Coal tar	6.
Cetyl alcohol	70.
Stearyl alcohol	8.
Ceresin white	7.
Lanolin	32.
Olive oil	32.
Duponol WA, concentrated	3.

DR. LOUIS SCHWARTZ

The addition of 10 percent of sodium propionate adds to the efficacy of this preparation. If desired, 64 Gm. of liquid petrolatum may be substituted for the lanolin and olive oil. The ointment is applied twice a day.

In the treatment of the chronic stage, ℞ 16 or, if necessary, ℞ 9, ℞ 10, ℞ 11 or ℞ 12 may be used with caution. ℞ 10, ℞ 11 and ℞ 12 should not be used if there are dermatophytids present. In most cases it is necessary to juggle different medication to clear up the chronic stage.

PROPHYLAXIS

There is considerable debate as to whether or not fungus infections can be spread by shower and locker room floors. The authors suggest that everyone using such rooms wear slippers with wooden soles, and that the slippers be sterilized once a week by placing them in 1 percent Liquor Cresolis Compositus, or by steam sterilization. If foot baths must be used, it is suggested that a 1 percent Liquor Cresolis Compositus or sodium hypochlorite solution in rubber pans be employed.

After the shower, the feet should be thoroughly dried and the spaces between the toes dusted with ℞ 5 or ℞ 6.

Socks should be changed daily if athlete's foot is present. In addition, in the presence of a high frequency of fungus infections, an antiseptic liquid such as ℞ 2, ℞ 3 or ℞ 7 should be applied between the toes and on the soles of the feet several times a week.

Infected socks and shoes should be sterilized. Socks may be boiled or allowed to soak overnight in a 1 percent Liquor Cresolis Compositus solution and washed out with cold water the following morning. Dusting powders ℞ 5 and ℞ 6 may be used in the shoes.

Socks and shoes can be placed in a closed receptacle and exposed to the vapors of formaldehyde. This can be carried out with paraformaldehyde tablets. The materials are kept in a closed box for 24 to 48 hours and then thoroughly aired before wearing in order to prevent a formaldehyde contact dermatitis.

NATIONAL POOL HAS COLLECTED 14 1/4 BARRELS OF QUININE SALTS

63,542 OUNCES OF DRUGS YIELDED BY 7868 PACKAGES OPENED DURING FIRST TWO MONTHS OF QUININE PROJECT

DURING the first two months of operation the National Quinine Pool received and opened 63,542 ounces of cinchona derivatives, representing the contributions of 7868 pharmacists. Considerably more than 7868 packages were received during this period, but it has been impossible, even with a working force of 18 persons, to keep up to date with the opening of the packages as they arrive.

The antimalarial drugs sorted and pooled by March 15 filled 18 1/4 barrels, and was made up as follows:

4 barrels of powdered quinine sulfate
4 barrels of capsules of quinine sulfate
1 barrel of pills of quinine sulfate
1/4 barrel of tablets of quinine sulfate
2 barrels of quinine hydrochloride
2 barrels of quinine salicylate
1 barrel of quinine bisulfate
1 barrel of quinine hydrobromide
1 barrel of quinine alkaloid
1 barrel of quinidine sulfate
1 barrel of cinchonidine sulfate

The average contribution, per pharmacist, was 6.52 ounces.

The press has been very generous in giving publicity to the effort. Newspapers, magazines, pharmaceutical publications and other publications in the health field have responded. The *Journal of the A. M. A.* has carried articles on the Quinine Pool in two issues. Many radio broadcasts have been given on both national and local hook-ups.

The National Quinine Pool was established by the AMERICAN PHARMACEUTICAL ASSOCIATION at the request of the War Production Board and the Defense Supplies Corporation. It is housed in the AMERICAN INSTITUTE OF PHARMACY, 2215 Constitution Ave., Washington, D. C.

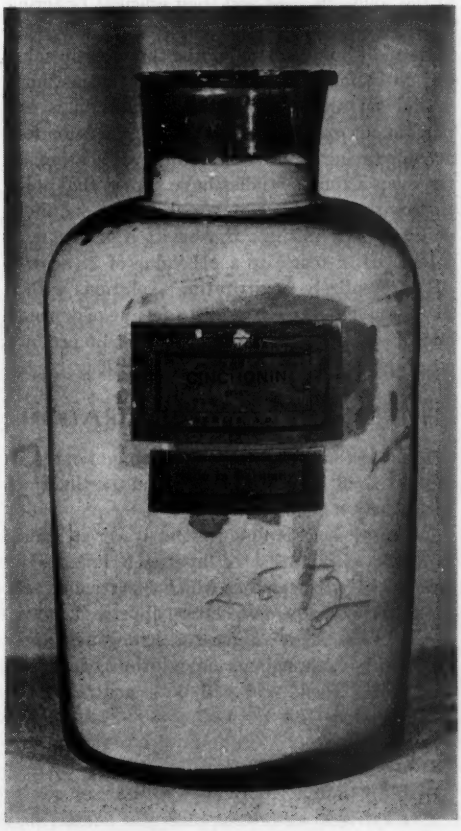
If you haven't sent your stock of quinine and other cinchona derivatives—powder, pill or capsule—off to the National Quinine Pool, do it today. If you have mislaid your folder which contained the card to enclose with your shipment, send a letter to that effect at the same time you send in your contribution. You will receive a certificate from the National Quinine Pool in acknowledgment. An accurate record is being kept of every pharmacist's contribution.

Send bulk quinine and other cinchona salts and alkaloids and tablets, capsules and pills of them. Do not send preparations of quinine or other cinchona derivatives which are in combination with other medicial agents, such as Quinine and Urea Hydrochloride, Quinine and Urethane, Quinine Bismuth Iodide, etc. Do not send ampuls and parenteral medication or liquids.

Send your contribution to:

THE NATIONAL QUININE POOL
War Production Board
Defense Supplies Corporation
c/o American Pharmaceutical Association
2215 Constitution Ave., N. W.
Washington, D. C.

THANKS TO HITLER AND HIROHITO

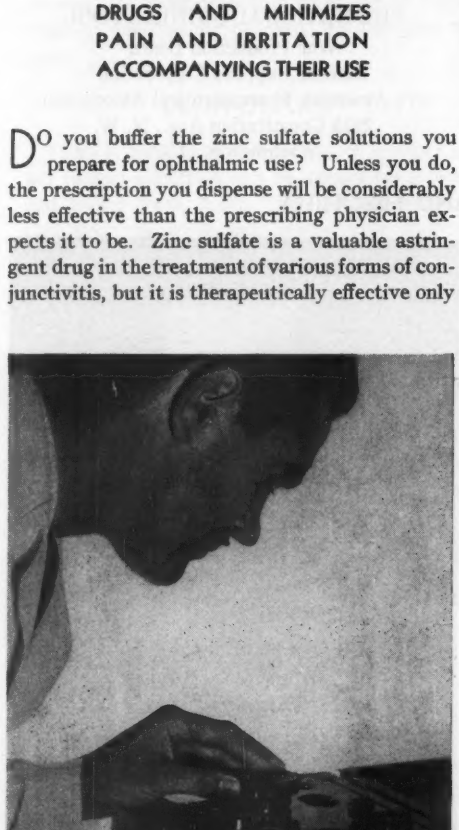


These bottles of cinchonine and quinine, made in Germany and Japan, respectively, were received at the National Quinine Pool as part of the contributions of retail pharmacists. The drugs will be pooled and reprocessed for the use of the Army and Navy.

DO YOU BUFFER OPHTHALMIC SOLUTIONS?

ADJUSTMENT OF pH OF SOLUTIONS USED IN THE EYES INCREASES THE EFFECTIVENESS OF MANY DRUGS AND MINIMIZES PAIN AND IRRITATION ACCOMPANYING THEIR USE

DO you buffer the zinc sulfate solutions you prepare for ophthalmic use? Unless you do, the prescription you dispense will be considerably less effective than the prescribing physician expects it to be. Zinc sulfate is a valuable astringent drug in the treatment of various forms of conjunctivitis, but it is therapeutically effective only when in an acid solution. It is precipitated in alkaline solution and its value as an astringent destroyed. Various authorities have pointed out that since tears are alkaline, the zinc sulfate in an ophthalmic solution is precipitated, and its astringent action largely nullified, when it comes into contact with the eye, unless the solution is properly buffered to resist the alkalinity of the tears and thus retain its acid character.



In the case of many of the alkaloids instilled into the eyes, the amount of drug which is absorbed by the cornea, and the consequent therapeutic effect, is chiefly dependent upon the *p*H of the solutions used and their efficient buffering to prevent change.

In addition to enhancing the therapeutic value of ophthalmic solutions, the proper adjustment of the *p*H and the buffering of collyria is important in reducing the pain and discomfort accompanying the use of any medication in the eye. Clinical studies have shown that solutions with a *p*H value of 9 or above are definitely painful and irritating; those with a *p*H value of 8 (the *p*H of tears) to a *p*H value of 7 (neutral *p*H) are entirely nonirritating; solutions with a *p*H value of 6.6 to 6.0 induce a feeling of dryness; and those with a *p*H value of less than 4.5 produce a burning sensation.

HYDROGEN ION CONCENTRATION

In order to undertake the buffering of ophthalmic solutions, one must understand the theory of hydrogen ion concentration.

When an acid is dissolved in water it makes available a quantity of hydrogen ions. The amount of hydrogen ions which a particular acid produces in an aqueous solution governs its activity and classifies it as either a strong acid or a weak acid. Although normal solutions of a strong acid and a weak acid will both neutralize the

The hydrogen ion concentration of a solution may be determined by passing a weak electric current through it and measuring its efficiency as a conductor of electricity.

same amount of an alkali, and thus would be considered of the same strength if judged by ordinary titration methods, the strong acid is a far better conductor of electricity and reacts more readily with metals than does the weak acid. This activity of an acid, as contrasted to its neutralizing capacity, is attributed to the extent to which it dissociates in solution and produces hydrogen ions. Since one test of this dissociation is the efficiency of the solution to conduct electricity, the hydrogen ion concentration can be measured by passing a weak electric current through the solution and recording the strength of the current by means of a potentiometer.

When a base is dissolved in water it makes available hydroxyl, or OH, ions. The amount of hydroxyl ions which a particular base produces in an aqueous solution governs its activity and classifies it either as a strong base or a weak base.

In pure water the concentration of hydrogen ions and hydroxyl ions is equal. If acid is added to water, the number of hydrogen ions available in the aqueous solution is increased and there will be a greater concentration of hydrogen ions than hydroxyl ions present. Conversely, if a base is added to water the number of hydroxyl ions available in the solution will be increased and there will be a greater concentration of hydroxyl ions present. Although the activity of a solution could be expressed in terms of its concentration of hydrogen ion or hydroxyl ions, depending upon which predominated, for the sake of convenience it is customary to express the value of both acid and basic solutions in terms of high or low hydrogen ion concentration.

Since the numerical values of hydrogen ion concentration would run into huge figures, too cumbersome for practical use, they are expressed in terms of *p*H value, which have been calculated mathematically to permit the use of a scale from 1 to 14 to denote hydrogen ion concentration. A *p*H value of 7 denotes neutrality; values higher than 7 denote increasing alkalinity; and values lower than 7 denote increasing acidity. Each unit is 10 times as alkaline as the next lower unit, or 10 times as acidic as the next higher unit. Thus a solution with a *p*H value of 9 is ten times as alkaline as one with a *p*H value of 8, and a solution with a *p*H value of 10 is ten times as alkaline as one with a *p*H value of 9, or (10×10) 100 times as alkaline as a solution with a *p*H value of 8.

Although the most accurate method of determining the hydrogen ion concentration of a solution is by the use of a potentiometer to measure the extent to which they will conduct electricity, a series of indicators which change color within various ranges of *p*H have been developed, and these offer a rough method of measurement.

BUFFERS

If solutions of definite hydrogen ion concentration are necessary in order to prevent certain drugs from precipitating, or in order to make them nonirritating to body tissues, it follows that some means must be provided to maintain such solutions at the desired *p*H. It would do little good to adjust an ophthalmic solution of zinc sulfate to a *p*H value of 6 if the alkalinity of the tears promptly increased the *p*H value to 8 and precipitated the drug as soon as the solution came into contact with the eye. To meet this situation, buffer solutions of weak acids with a salt of that weak acid or of a weak alkali with a salt of that weak alkali have been developed. Such buffer solutions have the ability to combine with additional hydrogen or hydroxyl ions, as the case may be, and convert them into the comparatively un-ionizing weak acid or alkali. In this way, the established hydrogen ion concentration of the solution is not disturbed.

Dr. Sanford Gifford, of the Northwestern University Medical School, has developed a group of buffer solutions for use in ophthalmic preparations. The Third Edition of the Pharmaceutical Recipe Book gives the formulas for these buffers and also provides a table which shows the proportion of acid and alkaline buffer solutions which should be used to produce stable solutions of any desired *p*H value from 5 to 9.

A buffer solution itself serves as an effective therapeutic product as an eye wash, a contact lens fluid, and in the treatment of alkali burns, vernal conjunctivitis, pneumococcic infections, corneal ulcers, and in streptococcic infections.

Pharmacists who pride themselves on the completeness of their professional services will find abundant use for the section of the Recipe Book devoted to the subject of ophthalmic solutions for it will enable them to increase the effectiveness of such prescriptions and make them less irritating to the patient.

There is some controversy among authorities on the importance of also adjusting the tonicity of ophthalmic solutions. Many contend that the acidity or alkalinity of the preparation is pri-

marily responsible for the irritation of unadjusted solutions and that the regulation of this factor with buffer solutions tends to bring the tonicity of the solution within proper limits. Some ophthalmologists, however, prefer to have their prescriptions made isotonic with the tears, and to meet this need the new Recipe Book contains a table of the concentrations of some 40 commonly used ophthalmic drugs necessary to yield such isotonic solutions, and the method of calculating such adjustment is explained for the guidance of pharmacists.

The proper compounding of ophthalmic prescriptions is generally acknowledged to represent one of the highest types of professional service the pharmacist can offer. This section of the new edition alone is worth the cost of the book.

The Third Edition of the Pharmaceutical Recipe Book is available at $5.00 a copy from the Mack Printing Company, Easton, Pa. Dues-paid active members of the AMERICAN PHARMACEUTICAL ASSOCIATION may purchase R. B. III at $3.50 a copy, but they must order their copies through the ASSOCIATION. A. PH. A. members, therefore, should address their orders to the ASSOCIATION, at 2215 Constitution Ave., Washington, D. C.; and nonmembers should address their orders to the Mack Printing Company, Book Department, Easton, Pa. Checks or money orders must accompany orders. It is important to note carefully these instructions as no rebate can be made to members who inadvertently order their copies from the Mack Company instead of through the ASSOCIATION.

NOTICE

AMERICAN PHARMACEUTICAL ASSOCIATION COMMITTEE ON PHARMACEUTICAL RESEARCH

The A. PH. A. Committee on Pharmaceutical Research announces the availability of certain limited funds for research grants.

These grants are to be made by the Council of the A. PH. A. on the recommendations of the Committee on Pharmaceutical Research. They are to be made on the following basis:

(*a*) the extent which the award will serve to promote Pharmaceutical Research,
(*b*) whether the award supplements the A.PH. A. laboratory program,
(*c*) the qualifications of those who will perform the work for which the award is made and the facilities of the laboratory where the research will be conducted.
(*d*) Preference will be given to applications wherein the award will supplement a contribution from the institution or laboratory in which the research will be conducted.

Those interested in being considered for the above awards will please communicate promptly with the Chairman of the Committee on Pharmaceutical Research (Francis E. Bibbins, 150 West 64th Street, Indianapolis, Indiana) who will send application blank which, when returned, will supply all the details that will enable the Committee to carefully evaluate the projects listed in the application. These applications should be forwarded promptly so that they can be given early consideration.

FRANCIS E. BIBBINS, *Chairman*
Committee on Pharmaceutical Research

THE HOSPITAL PHARMACY

by AUSTIN E. SMITH, M.D.

SECRETARY, COUNCIL ON PHARMACY AND CHEMISTRY, AMERICAN MEDICAL ASSOCIATION

THE hospital pharmacy should be a diplomatic door to rational therapeutics in hospital practice. As one of the most frequently consulted therapeutic departments, it is in intimate relation with the hospital administrators, attending physicians and nursing staff. The influence which it can exert over the purchase and dispensing of drugs is often overlooked.

Five principles have been proposed for an adequate pharmacy service in the hospital: the organization of a hospital pharmaceutical service, the appointment of a pharmacy committee, the maintenance of a pharmaceutical reference library, the use of standard preparations and adequate supervision. In determining the policy of operation, the pharmacy committee should recommend only the use of official agents and nonofficial drugs which have been evaluated by competent medical bodies. Informative standards are the United States Pharmacopœia, the National Formulary, and New and Nonofficial Remedies, publications of bodies which have been chosen as representative of pharmacy and medicine.

The economy of choosing drugs judiciously has been demonstrated repeatedly. One hospital pharmacy experienced a saving of $50,000 within one year after the adoption of specific regulations by the hospital formulary committee, this saving being effected essentially by the limiting of the number of drugs with similar therapeutic action, the elimination of unnecessarily complex mixtures and the regulation of proprietary drugs.

Although a pharmaceutical manufacturer is entitled to the rewards due from the discovery of a new and useful drug, the purchasing department must recognize the economic loss of buying proprietary preparations when official equivalents are available. There is almost always an appreciable difference in the costs. For example, a survey of the September 1941 issue of a popular price list of drugs revealed that the total cost of an ounce of each of nineteen substances under a protected name was $48.67, whereas the total cost of an ounce of each of these substances under an unprotected name was $15.67. Thus the cost of a proprietary name to the consumer would be $33. Included in these nineteen agents were sedatives, vasoconstrictors, local anesthetics, antiinfective agents and analgesics.

In 1933 Hatcher and Stainsby proposed eight rules to aid a hospital formulary committee in determining the admission of articles. These rules are still admirably applicable and in part declare: simple official (Pharmacopœial) substances may be admitted on request unless they have become superfluous; no article should be admitted, except for controlled research, before its therapeutic value has been established; no article of secret composition should be admitted; no article which is sold under a proprietary name should be admitted under such a name if a substance of identical composition can be obtained under a nonproprietary name; no

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mixture of two or more active substances should be admitted unless evidence is submitted that the mixture presents therapeutic advantages over the simple substances; no proprietary article will be admitted before it has been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in New and Nonofficial Remedies; the oral should be given preference to the parenteral administration of drugs whenever possible.

Active coöperation is needed by all professions if a hospital is to maintain a progressive pharmacy. The physician should not prescribe any product unless he knows the truth about it at first hand or through an unbiased source; until he knows what the remedy contains or what it may reasonably be expected to do. The pharmacist has a store of information which is available for the asking; a closer acquaintance between him and the members of the attending staff will be of mutual benefit. The pharmacist in turn should be ready to offer up-to-the-minute information on problems within his purview and should not hesitate to advance his views in the interest of the hospital and patient.

The hospital pharmacy and the advisory pharmacy committee can be of added value by providing a list of materials which are scarce because of war and a list of substitutes which are satisfactory both clinically and economically. By maintaining a reference library on laws pertaining to the control of drugs, problems related to the prescribing of agents restricted to a physician's prescription can be obviated. As the nub of hospital materia medica, the pharmacy can serve as a fulcrum for many regular therapeutic conferences.

Obviously the hospital pharmacy is more than a place for the dispensing of drugs. In a sense it is a mirror which reflects the practice of that particular hospital and as such it should be the interest of all hospital departments. If this interest is not made evident, the pharmacy cannot be expected to function as it should; it will be no more than a tap to be turned on and off at will when a pill or powder is needed.

AUSTIN E. SMITH, M.D.

Charter membership in the newly formed American Society of Hospital Pharmacists is available to individuals who can qualify under the requirements for membership as contained in the Constitution and By-Laws of the organization, published in THIS JOURNAL for March, 1943. Applications should be addressed to Miss Hazel Landeen, Christian R. Holmes Hospital, Cincinnati, Ohio.

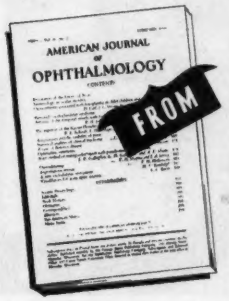
THE PREPARATION OF BUFFERED OPHTHALMIC OINTMENTS

USE AN EMULSION-TYPE BASE, SUBSTITUTE THE APPROPRIATE GIFFORD BUFFER SOLUTION FOR DISTILLED WATER, AND EXERCISE THE MOST CRITICAL TECHNIQUE. HERE IS A HIGHLY SPECIALIZED FORM OF MEDICATION AROUND WHICH TO BUILD PROFESSIONAL PRACTICE

FOR the momentary application of a drug to a limited area near the eye, as, for example, the cauterization or silver nitrate application to a localized spot, the stick form of medication is preferred. For the temporary, limited medication of an extensive area, such as for local anesthetics, mydriatic drugs, for diagnostic stains, or the treatment of very mild diseases of the anterior segment of the eye, the eye drop or eye lotion is suitable. But for the treatment of most ophthalmic conditions, the most effective form of medication is the ointment.

Louis M. Scheineson, Director of the Department of Pharmacy, The Jewish Hospital, Cincinnati, Ohio, presents a comprehensive discussion of ophthalmic ointments in the *American Journal of Ophthalmology* [26:2 (February, 1943), 171–178] which offers much to the pharmacist who wishes to develop ophthalmic prescriptions.

The author points out that in the treatment of inflammations of the lid margins, infections of the lacrimal-drainage passages, conjunctival inflammations, corneal diseases which can be helped by local medications, and inflammations of the iris and ciliary body it is essential that the affected tissue be kept in prolonged contact with the drug. This objective is best achieved with an ointment. Jellies are undesirable because they are too sticky, are easily extruded from the conjunctiva, and require preservatives, most of which are undesirable in ophthalmic medication.



CHOICE OF BASE

The base used for ophthalmic ointments must be nonirritating and, if possible, nonallergenic. Although petrolatum has these properties and is widely used as a base for ophthalmic ointments, the author states that ophthalmologists prefer an emulsion type base. For application to tear-moistened structures of the eye, conjunctiva, cornea, or to the lacrimal sac, a base that is miscible with water is more therapeutically effective than a greasy base. It spreads more readily and facilitates the transfer of the medication from the ointment to the diseased tissue. Mr. Scheineson believes that a base of the oil-in-water type would be of greatest effectiveness, as the drug could be dissolved in the external aqueous phase and thus be in immediate contact with the lacrimal layer convering the eye structures. Unfortunately, however, no satisfactory base of this type has been developed, and the most suitable bases available today for ophthalmic ointments, in the experience of the author, are Aquaphor (Duke) and Hydrosorb (Abbott). For ophthalmic ointments, up to 40 percent of water can be incorporated with these bases. The more water that is added, the creamier the ointment, but the usual amount is 20 percent. Too much water is undesirable because, on standing in the mortar or in the tube, the water may separate from the base and make the preparation unsuitable for use.

PREPARING THE OINTMENT

The technical procedure of preparing ophthalmic ointments with these bases lends itself to the extemporaneous preparation of small amounts of ointment as prescribed by the physician. The resulting ointments are pharmaceutically and aesthetically acceptable.

For water-soluble drugs, a solution is made in a quantity of "water" to the amount of at least 20 percent of the finished ointment. This is placed in a mortar of suitable size, and the proper amount of ointment base is added. The solution and base

are triturated thoroughly. As the trituration continues the base absorbs the solution, loses its translucency and becomes opaque. When the entire amount of water has been absorbed, the ointment has become white and assumed the consistency of sour cream.

USE GIFFORD SOLUTIONS

For the "water" mentioned above, Mr. Scheineson uses the appropriate Gifford buffer solution Thus, instead of dissolving the prescribed drugs in distilled water, they are dissolved in either Alkaline Buffer Solution No. 1 or Acid Buffer Solution No. 1. In this way, the *p*H of the product is somewhat controlled, as it is in collyria.

The use of a buffer solution makes the ointment less irritating, and helps maintain the drug at the *p*H at which it is most effective. Various authors have pointed out the *p*H of the medium largely governs the amount of the drug which is absorbed by the eye structures. Summed up, the advantages of controlling the *p*H of ophthalmic ointments are as follows:

(1) Stabilizes the preparation against change in *p*H due to carbon dioxide from the air or the acidity or alkalinity of eye secretions.

(2) Protects the preparation against fungus or bacterial growth, with the increase in acidity such would produce.

(3) Eliminates or definitely reduces irritation.

(4) Eliminates the initial pain and discomfort to the patient when the preparation is applied.

Gifford has reported the *p*H of aqueous solutions of drugs commonly used in ophthalmology as follows:

1% Atropine sulfate, *p*H 5.8
2% Homatropine hydrobromide, *p*H 5.5
1% Pilocarpine nitrate, *p*H 4.8
0.2% Eserine sulfate, *p*H 6.6

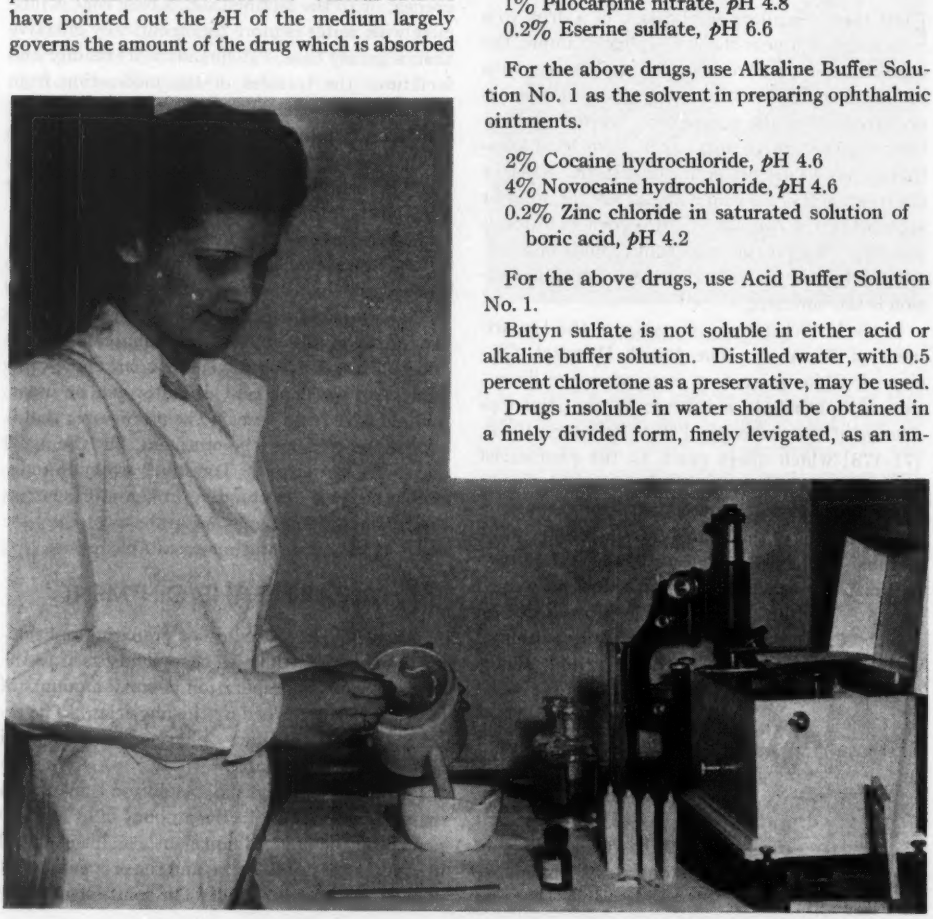
For the above drugs, use Alkaline Buffer Solution No. 1 as the solvent in preparing ophthalmic ointments.

2% Cocaine hydrochloride, *p*H 4.6
4% Novocaine hydrochloride, *p*H 4.6
0.2% Zinc chloride in saturated solution of boric acid, *p*H 4.2

For the above drugs, use Acid Buffer Solution No. 1.

Butyn sulfate is not soluble in either acid or alkaline buffer solution. Distilled water, with 0.5 percent chloretone as a preservative, may be used.

Drugs insoluble in water should be obtained in a finely divided form, finely levigated, as an im-



palpable powder. If not available in this form, the drug must be thoroughly powdered with mortar and pestle. To the fine powder in the mortar, the water and base are added, and the mixture triturated well. An excellent, soft ointment of ammoniated mercury can be prepared in this manner. Such a preparation is desirable for use on the lid margins in certain types of marginal inflammation or in infections of the cilia or supercilia, especially in cases of crab louse, *Phthirius pubis*, infection.

SCARLET RED ANESTHETIC OINTMENT

In the treatment of corneal denudation, erosion or abrasion, when the physician wishes to use scarlet red to promote epithelization, an anesthetic ointment such as Nupercaine or Pontocaine Ointment may be used as the base, as these conditions are extremely painful. Five percent of scarlet red is usually prescribed, and 15 to 20 percent of a potent vitamin A liver oil may be added to promote healing.

STRONGER EPINEPHRINE OINTMENT

To dilate pupils, break recent synechias, and to reduce the congestion and tension of congestive glaucoma, Weintraub has suggested 1.8 percent and 0.9 percent ointments of epinephrine. This ointment is prepared with epinephrine bitartrate in an emulsion type base as outlined. It must be used cautiously to prevent great damage to the eye.

MYDRIATIC OINTMENTS

When mydriatic drugs, such as atropine, are intended solely for local, temporary action in diagnostic procedures, fundus examinations and refractions, the drop form of medication is suitable. In the treatment of acute inflammatory conditions of the iris or ciliary body, or to counteract an excessive hypotension of the eye following perforating injuries or operative procedures such as for glaucoma, the ointment form is preferable.

Atropine is the drug of choice in such conditions, the author points out. Atropine consists of equal parts of dextro-hyoscyamine and laevo-hyoscyamine, both of which affect the central nervous system, but only the laevo-hyoscyamine is active in the eye. Therefore, a preparation can be made of laevo-hyoscyamine which is twice as active in the eye as a preparation of the atropine salt of similar strength, but which will, if systemically absorbed, be only as active as atropine. Ophthalmologists thus prefer a hyoscyamine ointment to an atropine sulfate ointment.

Such a hyoscyamine ointment is suitable as a prescription for home use in order to produce cycloplegia in young children for refractive purposes. It is preferable to drops because it is not so prone to run into the nose and be absorbed systematically, producing the flushing often seen in young children.

Physostigmine salicylate or sulfate ointments of this type are used in the operating room to contract the pupil after certain surgical procedures, for use in acute phases of glaucoma, and in refractive work to counteract the previously used mydriatic-cycloplegic drug.

Laevo-hyoscyamine may be added to the scarlet red-anesthetic ointment previously described for the alleviation of corneal disease complicated by severe iritis. All of the drugs can be incorporated in the one ointment to avoid the necessity of the patient's using several different preparations.

SULFATHIAZOLE OINTMENT

This same general method has been used by the author for the preparation of zinc sulfate ointment for certain types of conjunctivitis and for the preparation of ointments of the sodium salts of sulfa drugs. The most frequently prescribed ointment of the sulfa drugs is that containing 2, 3 or 5 percent of hydrated sodium sulfathiazole.

NIGHT USE

The ointment form of medication is particularly well adapted for use in the treatment of those cases of conjunctivitis which are accompanied by secretion and by agglutination of the edges of the lids and of the ashes. In such cases, the ointment provides not only prolonged therapeutic action, but also acts as a lubricant to prevent the lashes or lids from adhering.

CAREFUL TECHNIQUE

Too much emphasis cannot be placed on the care which should be exercised in the preparation of ophthalmic ointments, for the eye is one of the most delicate and sensitive organs of the body.

If possible, a special section of the prescription department should be set aside for the compounding of ophthalmic prescriptions. Separate uten-

sils should be kept for the mydriatic-cycloplegic group of drugs—atropine, hyoscyamine, etc.—because sometimes traces of such alkaloids are retained in the utensils and show up in other preparations. This can lead to serious difficulties if a trace of such drugs should get into a preparation used in a glaucomatous eye.

Chemicals should be of the highest quality C. P.). The vitamin oils should be of the highest potency, unadulterated, and free from preservatives. Separate containers of drugs and chemicals should be reserved for ophthalmic preparations in order to avoid possible contamination.

No preservatives should be used in ophthalmic ointments because of the chemical changes which take place, forming new, unknown compounds with varying properties.

All utensils should be clean and sterile. A sterile towel should be placed over the prescription counter and utensils placed on it. Wooden tongue depressors should be used instead of metal or hard rubber spatulas and should be discarded after each preparation.

After the ointment has been thoroughly triturated, it should be examined under a microscope in order to make sure of a homogeneous mixture.

Ophthalmic ointments should be dispensed in small collapsible tubes. Ointment jars allow too large an area of the product to be exposed.

The preparation of ophthalmic ointments represents the art of compounding in one of its highest forms. Progressive pharmacists will seize upon the opportunity they offer to build a specialized professional practice that will be appreciated by physicians.

FOURTH ANNOUNCEMENT

U. S. P. ANTI-ANEMIA PREPARATIONS ADVISORY BOARD

REVISION OF DIRECTIONS TO MANUFACTURERS AND DISTRIBUTORS FOR APPLICATIONS FOR ACCEPTANCES OF PRODUCTS BY THE U. S. P. ANTI-ANEMIA PREPARATIONS ADVISORY BOARD

Directions for the Submission of Data by Manufacturers on the Potency of Liver and Stomach Preparations, as determined by the treatment of cases of pernicious anemia, have been slightly revised in the light of experience. No significant changes in principle have been made. A summary of the specifications of Anti-Anemia Preparations, U. S. P. XII, and directions covering labeling, are included in the material presented on the following pages. Copies will be mailed upon application to the Chairman of the Board, Dr. William B. Castle, Boston City Hospital, Boston, Mass.

"*Directions for Applications for Resale or Repackaging*" of U. S. P. accepted anti-anemia preparations have been developed. The material recapitulates former rulings of the Board, includes a new ruling concerning dilutions and mixtures of accepted liver or stomach preparations, a summary of the specifications of Anti-Anemia Preparations, U. S. P. XII, and directions concerning labeling. The text appears on the following pages.

"*Additional Accepted Anti-Anemia Preparations.*" A list of Anti-Anemia Preparations which have been approved and assigned unitage by the Anti-Anemia Board since the Third Announcement of February 1, 1940, is also submitted.

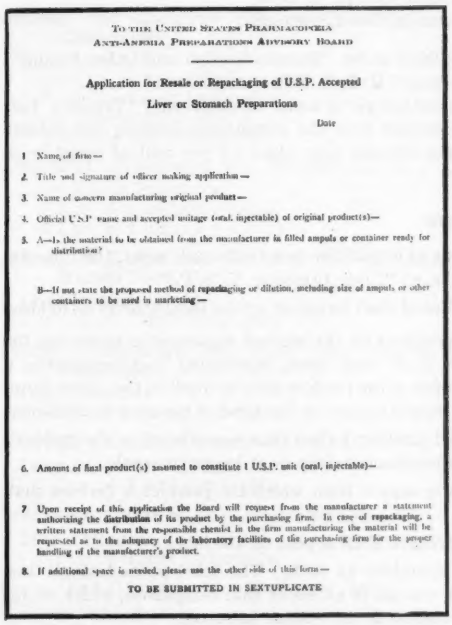
Respectfully submitted,
E. FULLERTON COOK, *Chairman*
U. S. P. Committee of Revision

March 1, 1943

ANTI-ANEMIA PREPARATIONS

DIRECTIONS FOR APPLICATIONS FOR RESALE OR REPACKAGING OF U. S. P. ACCEPTED PREPARATIONS*

If the firm requesting the approval of the Board for resale or repackaging is not the actual producer of the preparation, the firm must fill out and transmit to the Board the form "Application for Resale or Repackaging of U. S. P. Accepted Liver or Stomach Preparations." The forms may be obtained from and filed with Dr. William B. Castle, Chairman, Anti-Anemia Preparations Advisory Board, Boston City Hospital, Boston, Mass.



TO THE UNITED STATES PHARMACOPOEIA
ANTI-ANEMIA PREPARATIONS ADVISORY BOARD

Application for Resale or Repackaging of U.S.P. Accepted Liver or Stomach Preparations

Date

1 Name of firm—

2. Title and signature of officer making application—

3. Name of concern manufacturing original product—

4. Official U.S.P. name and accepted unitage (oral, injectable) of original product(s)—

5. A—Is the material to be obtained from the manufacturer in filled ampuls or container ready for distribution?

B—If not, state the proposed method of repackaging or dilution, including size of ampuls or other containers to be used in marketing—

6. Amount of final product(s) assumed to constitute 1 U.S.P. unit (oral, injectable)—

7 Upon receipt of this application the Board will request from the manufacturer a statement authorizing the distribution of its product by the purchasing firm. In case of repackaging, a written statement from the responsible chemist in the firm manufacturing the material will be requested as to the adequacy of the laboratory facilities of the purchasing firm for the proper handling of the manufacturer's product.

8. If additional space is needed, please use the other side of this form—

TO BE SUBMITTED IN SEXTUPLICATE

INFORMATION COVERING PREPARATIONS

For each preparation the following information will be required: 1. Name of firm. 2. Title and signature of officer making application. 3. Name of concern manufacturing original product. 4. Official U. S. P. name and accepted unitage (oral, injectable) of product(s). 5. Proposed method of repackaging or dilution, including size of ampuls or other containers to be used in marketing. 6. Amount of final product(s) assumed to constitute 1 U. S. P. unit (oral, injectable).

Upon receipt of the application forms from the subsidiary the Board will request from the manufacturer a statement authorizing the *distribution* of its product by the purchasing firm. In case of *repackaging*, a written statement from a qualified representative of the firm manufacturing the material will be requested as to the adequacy of the laboratory facilities of the purchasing firm for the proper handling of the manufacturer's product.

LIMIT OF CONCENTRATION FOR INJECTABLE LIVER EXTRACTS

The Board will not, for the present, assign to any preparation of injectable liver extract a strength greater than 15 U. S. P. units per cubic centimeter because of the possibility of loss of unknown factors of value in the treatment of patients with pernicious anemia during the concentration process.

DILUTIONS AND MIXTURES OF ACCEPTED LIVER OR STOMACH PREPARATIONS

Whenever possible, a relatively dilute liver extract should be produced by stopping the process of concentration rather than by diluting a more concentrated preparation. However, an accepted preparation of liver extract may be diluted with water or physiological salt solution to obtain an extract of lower U. S. P. unitage. Mixture of two strengths of liver extract of known U. S. P. unitage to obtain a third preparation is allowed only as a war emergency. Notification and approval of each such dilution or mixture is required by the Board.

* Applications are to be submitted to the Chairman of the U. S. P. Anti-Anemia Preparations Advisory Board, Dr. William B. Castle, Boston City Hospital, Boston, Mass.

MIXTURES OF OTHER SUBSTANCES WITH LIVER EXTRACTS

Until evidence has been accumulated to show that substances combined with liver extract do not change its potency or cause deterioration, unitage will not be assigned to mixtures of liver extract with other substances. When a Pharmacopœia preparation of liver or stomach is mixed with another preparation, the Board will not define the preparation as containing liver extract or stomach equivalent to a certain number of U. S. P. units, unless the potency of the final mixture as such has been established by appropriate clinical tests.

SUMMARY OF SPECIFICATIONS OF ANTI-ANEMIA PREPARATIONS, U. S. P. XII

The official names of liver and stomach preparations are as follows:

Extractum Hepatis, Extract of Liver, Dry Liver Extract.
Injectio Hepatis, Liver Injection, Liver Extract for Parenteral Use.
Liquor Hepatis, Solution of Liver, Liquid Extract of Liver.
Stomachus Pulveratus, Powdered Stomach, Dried Stomach.

These preparations shall conform to provisions outlined under "Standardization and Other Requirements for Products for the Treatment of Pernicious Anemia," U. S. P. XII.

Injectio Hepatis shall conform to additional requirements given under "Injectiones," "Sterility Test for Liquids," and "Containers for Injections" (but is exempt from the regulations covering the volume requirements for multiple dose containers). It must not contain more than 0.5 per cent of cresol or of phenol if either is used as a bacteriostatic agent.

LABELING

1. U. S. P. products shall exhibit on the label, alone or in addition to a trademark name, the Pharmacopœia name followed desirably by the letters U. S. P.; *e. g.*, "Liver Injection, U. S. P."

2. The potency of preparations as defined by the Board shall be stated on the label exactly as follows: "— No. (Gm., cc., capsules, teaspoonfuls) of material prepared by the method employed in producing the contents of this (ampul, vial, bottle) constitutes 1 U. S. P. unit (oral, injectable)." Alternatively, a statement of the number of U. S. P. units in a stated amount of the product may be made in the above form. No other or abbreviated statement of U. S. P. unitage should appear on the label of the outside container.

3. The average dose shall be stated on the label and shall not be less than would result in the patient's receiving 1 U. S. P. unit daily, whether the product is administered daily or at longer intervals.

4. No statement of the amount of original organ or organs from which the product is derived shall be made on the label.

5. A statement of the preservative used and its strength shall appear on the label.

6. The label shall designate each multiple-dose container as such. The label on each single-dose container shall note the fact that the container holds a volume in excess of that designated, which excess is only sufficient to permit the withdrawal and administration of the volume indicated.

7. The labeling on packages holding individual containers for injections in each of which the volume is 20 cc. or less is to bear the notations indicated above for the actual containers.

8. No mention shall be made on the label of the name of any condition or disease for the treatment of which the product might be used.

9. Attention is called to the Regulation under Section 502 (*b*) of the Federal Food, Drug and Cosmetic Act which reads as follows:

"Regulations (§2.102) (*a*) If a drug or device is not manufactured by the person whose name appears on the label, the name shall be qualified by a phrase, which reveals the connection such person has with such drug or device, such as 'Manufactured for and Packed by ——,' 'Distributed by ——,' or other similar phrase which expresses the facts."

10. Before final approval of the product the manufacturer shall submit to the Board 6 copies of the proposed labels or labeling.

GEORGE R. MINOT, M.D. WILLIAM T. SALTER, M.D.
W. W. PALMER, M.D. MAXWELL M. WINTROBE, M.D.
WILLIAM B. CASTLE, M.D., *Chairman and Secretary*,
Boston City Hospital, Boston, Mass.

ADDITIONAL PRODUCTS TO WHICH U. S. P. ANTI-ANEMIA UNIT VALUE HAS BEEN ASSIGNED

The following additional products have been assigned unitage by the Anti-Anemia Preparations Advisory Board between February 1, 1940, and January 25, 1943. For other approved anti-anemia products, see the First, Second, and Third U. S. P. Anti-Anemia Announcements.

PREPARATIONS OF LIVER

Adelphi Pharmaceutical Company, Brooklyn, N. Y.
Liver Injection
0.1 cc. = 1 unit (injectable)*

Adson-Intrasol Laboratories, Inc., New York City
Liver Injection
0.1 cc. = 1 unit (injectable)

Armour and Company (Armour Laboratories), Chicago, Ill.
Liver Injection
0.066 cc. = 1 unit (injectable)
0.1 cc. = 1 unit (injectable)
Liver Injection (Crude)
1 cc. = 1 unit (injectable)

Associated Laboratories, Inc., Philadelphia, Pa.
Liver Liquid Parenteral
0.1 cc. = 1 unit (injectable)
0.2 cc. = 1 unit (injectable)

Ayerst, McKenna and Harrison (U. S.) Ltd., Rouses Point, N. Y.
Liver Injection
0.1 cc. = 1 unit (injectable)

Bishop Laboratories, Inc., New York City, and Philadelphia, Pa.
Liver Injection
0.25 cc. = 1 unit (injectable)

Blue Line Chemical Company, St. Louis, Mo.
Liver Injection
0.1 cc. = 1 unit (injectable)

Boericke and Runyon, Inc., New York City
Liver Injection
0.1 cc. = 1 unit (injectable)

Brewer and Company, Inc., Worcester, Mass.
Extract of Liver
25 grams = 1 unit (oral)

Buffington's, Inc., Worcester, Mass.
Liver Injection
0.1 cc. = 1 unit (injectable)
0.2 cc. = 1 unit (injectable)

Chappel Laboratories, Rockford, Ill.
Liver Injection
0.33 cc. = 1 unit (injectable)

Chemico Laboratories, Inc., Indianapolis, Ind.
Liver Injection
0.1 cc. = 1 unit (injectable)

Cole Chemical Company, St. Louis, Mo.
Liver Injection
0.1 cc. = 1 unit (injectable)
0.2 cc. = 1 unit (injectable)

Direct Sales Co., Inc., Buffalo, N. Y.
Liver Injection
0.1 cc. = 1 unit (injectable)

The Drug Products Co., Inc., Long Island City, N. Y.
Liver Injection (Crude)
1 cc. = 1 unit (injectable)

S. F. Durst, and Company, Philadelphia, Pa.
Liver Injection
0.1 cc. = 1 unit (injectable)

Estro Chemical Company, New York City
Liver Injection
0.1 cc. = 1 unit (injectable)
0.4 cc. = 1 unit (injectable)

Forest Products Company, Kingston, Pa.
Liver Injection
0.1 cc. = 1 unit (injectable)
0.2 cc. = 1 unit (injectable)

Gold Leaf Pharmacal Company, New Rochelle, N. Y.
Liver Injection
0.1 cc. = 1 unit (injectable)
0.25 cc. = 1 unit (injectable)

The Harrower Laboratory, Inc., Glendale, Calif.
Liver Injection
0.2 cc. = 1 unit (injectable)
1.0 cc. = 1 unit (injectable)

J. F. Hartz Company, Detroit, Mich.
Liver Injection
0.1 cc. = 1 unit (injectable)

Harvey Laboratories, Inc., Philadelphia, Pa.
Liver Injection
0.25 cc. = 1 unit (injectable)
0.2 cc. = 1 unit (injectable)
0.1 cc. = 1 unit (injectable)

Hoosier Pharmacal Company, Indianapolis, Ind.
Liver Injection
0.1 cc. = 1 unit (injectable)
0.5 cc. = 1 unit (injectable)

Irwin, Neisler and Company, Decatur, Ill.
Liver Injection
0.1 cc. = 1 unit (injectable)

Italian Drugs Importing Company, Inc., New York City
Liver Injection
3 cc. = 1 unit (injectable)

C. B. Kendall Company, Indianapolis, Ind.
Liver Injection
0.1 cc. = 1 unit (injectable)

C. F. Kirk Company, New York City
Liver Injection
0.1 cc. = 1 unit (injectable)

The Lakeside Laboratories, Inc., Milwaukee, Wis.
Liver Injection
0.1 cc. = 1 unit (injectable)
0.2 cc. = 1 unit (injectable)
1.0 cc. = 1 unit (injectable)

* Abbreviated form of official statement regarding potency, which is as follows: "0.1 cc. of material prepared by the method employed in producing the contents of this vial constitutes 1 U. S. P. unit (injectable)."

The Laxseed Company, New York City
Liver Injection
0.1 cc. = 1 unit (injectable)

Lederle Laboratories, New York City
Liver Injection
0.1 cc. = 1 unit (injectable)

Lex Laboratories, Flushing, N. Y.
Liver Injection
0.066 cc. = 1 unit (injectable)

Eli Lilly and Company, Indianapolis, Ind.
Liver Injection
0.1 cc. = 1 unit (injectable)
0.2 cc. = 1 unit (injectable)

The William S. Merrell Company, Cincinnati, Ohio
Liver Injection
0.1 cc. = 1 unit (injectable)
0.2 cc. = 1 unit (injectable)

Modern Drugs, Inc., Indianapolis, Ind.
Liver Injection
0.1 cc. = 1 unit (injectable)

Mutual Pharmacal Company, Syracuse, N. Y.
Liver Injection
0.1 cc. = 1 unit (injectable)

Parke, Davis and Company, Detroit, Mich.
Liver Injection
0.5 cc. = 1 unit (injectable)
0.066 cc. = 1 unit (injectable)

Physicians' Drug and Supply Company, Philadelphia, Pa.
Liver Injection
0.1 cc. = 1 unit (injectable)
0.2 cc. = 1 unit (injectable)
0.066 cc. = 1 unit (injectable)

Premo Pharmaceutical Laboratories, Inc., New York City
Liver Injection
0.1 cc. = 1 unit (injectable)
0.2 cc. = 1 unit (injectable)
0.25 cc. = 1 unit (injectable)
Extract of Liver
50 capsules (25 grams) = 1 unit (oral)

Raymer Pharmacal Company, Philadelphia, Pa.
Liver Injection
0.1 cc. = 1 unit (injectable)

Reed and Carnrick, Jersey City, N. J.
Liver Injection
0.1 cc. = 1 unit (injectable)
0.2 cc. = 1 unit (injectable)

William H. Rorer, Inc., Philadelphia, Pa.
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0.1 cc. = 1 unit (injectable)
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Sears, Roebuck and Company, Chicago, Ill.
Extract of Liver
50 capsules = 1 unit (oral)

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Liver Injection
0.066 cc. = 1 unit (injectable)
0.33 cc. = 1 unit (injectable)

Standard Pharmaceutical Company, New York City
Liver Injection
0.1 cc. = 1 unit (injectable)

Sutliff and Case, Inc., Peoria, Ill.
Liver Injection
0.1 cc. = 1 unit (injectable)

Torigian Laboratories, Inc., Queens Village, N. Y.
Liver Injection
0.1 cc. = 1 unit (injectable)
0.2 cc. = 1 unit (injectable)

E. Tosse and Company, Brooklyn, N. Y.
Liver Injection
0.1 cc. = 1 unit (injectable)

U. S. Standard Products Company, Woodworth, Wis.
Liver Injection
1 cc. = 1 unit (injectable)

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Extract of Liver
25 grams = 1 unit (oral)

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Liver Injection
0.1 cc. = 1 unit (injectable)

Wilson Laboratories, Chicago, Ill.
Liver Injection (Crude)
0.5 cc. = 1 unit (injectable)
1.0 cc. = 1 unit (injectable)

Ziegler Pharmacal Company, Buffalo, N. Y.
Liver Injection
0.1 cc. = 1 unit (injectable)

PREPARATION OF STOMACH

Parke, Davis and Company, Detroit, Mich.
Powdered Stomach
40 grams = 1 unit (oral)

It is the desire of the Board to assist manufacturers and distributors in every way to receive U. S. P. approval and unitage for satisfactory products.

Because of the recognized difficulties of securing numerous tests, the particular daily dosage of the product which, in the opinion of the Board, has produced a satisfactory clinical and hematopoietic response will be considered as a U. S. P. unit unless, as a result of further observations, smaller amounts of material are approved by the Board as constituting a U. S. P. unit. It is thus apparent that the designation of a U. S. P. unit indicates only the particular amount of material which has been approved and *not necessarily the minimum amount* of the particular product which might be so approved by further tests with smaller dosage. U. S. P. units of different preparations are therefore not necessarily strictly comparable in potency.

The Board wishes at this time to express its sincere appreciation of the coöperation of the manufacturers and distributors in this effort to provide anti-anemia products of U. S. P. quality to the medical profession. Supplementary announcements will be issued from time to time either as reëvaluations of accepted products or as reports of acceptances of new products.

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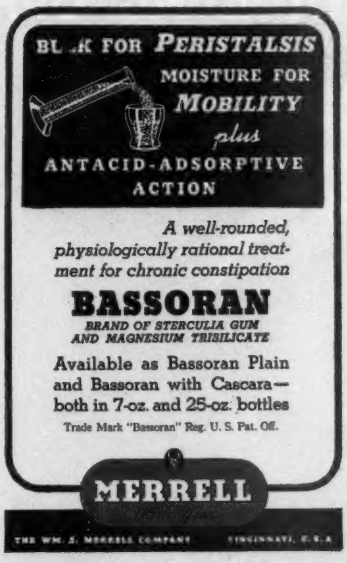
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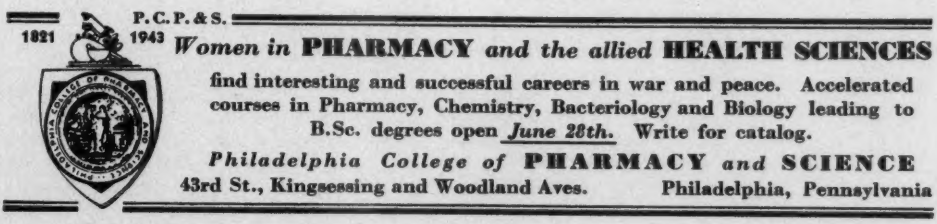
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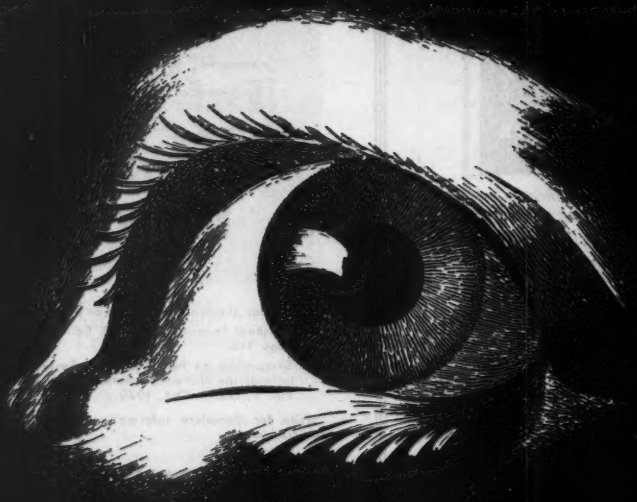

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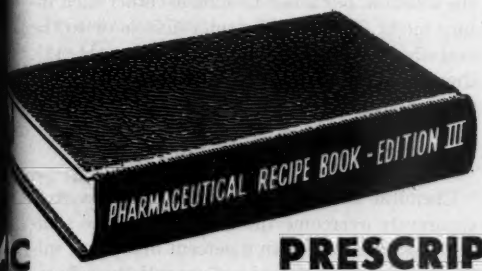

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SULFA NASAL SPRAY

STABLE SOLUTION OF SODIUM SULFATHIAZOLE WITH DESOXYEPHEDRINE INTRODUCED FOR THE TREATMENT OF SINUSITUS

IT was to be expected that as soon as the effectiveness of sulfathiazole in staphylococcus infections was established a few years ago, research-minded physicians would start trying this new drug in the treatment of various infections caused by this organism that have defied other therapeutic agents.

Thus did Dr. Frederick Myles Turnbull, of Los Angeles, investigate its use in the treatment of the infection which claims millions of sufferers—sinusitis. Dr. Turnbull had studied cultures of material from the sinuses of many chronic sinusitis patients and found the predominating organism to be staphylococcus. Prescribing a 5 percent solution of sodium sulfathiazole as a nasal spray, used twice a day, in 47 sinusitis cases, he found that congestion was promptly relieved, nasal passages were opened, drainage was established in less than half an hour, and pressure headaches were quickly and almost completely relieved. Only 3 of the 47 patients reported no benefit; and of this group, 2 had hay fever and one was fighting an influenza infection.

In a paper published in the *Journal of the American Medical Association* (116:17 (April 26, 1941) 1899–1900), Dr. Turnbull summed up his work with the statement: "A 5 percent solution of the sodium salt of sulfathiazole was found to bring greater relief from the symptoms of chronic sinusitis when used as a nasal spray than any other preparation that I have used."

OBJECTIONS DEVELOP

Other physicians followed Dr. Turnbull's lead and began to prescribe the sulfa solution as a nasal spray, as nose drops, and for use on tampons.

One of the first difficulties to be encountered was the instability of the solution. If exposed to light, the solution turned brown within 48 hours, lost its therapeutic efficacy, and became definitely irritating. Studies on rabbits indicated the possibility of injury to the mucous membranes of the nasal passages following the use of the solution, but failed to show whether such injury might be due to the sulfathiazole or to the excessive alkalinity of the solution (*p*H 11). Conflicting reports appeared in the literature throughout most of last year.

OBJECTIONS OVERCOME

Chemical and clinical research, however, has apparently overcome the difficulties. The solution was stabilized with 2 percent of sodium sulfite, the concentration of sodium sulfathiazole reduced to 2.5 percent, and the *p*H lowered to 9.

Further study revealed that the addition of a drug with vaso-constrictor action to aid in shrinking the nasal mucous membranes would enhance the effectiveness of the product. Ephedrine would be the natural choice for this purpose, but this drug is incompatible in solution with sodium sulfathiazole, so desoxyephedrine was used.

The Federal Food and Drug Administration, which has held sulfa drugs to be unsafe for use except under the supervision of a physician, has permitted New Drug applications for sodium sulfathiazole nose drops to become effective with labeling which permits their over-the-counter sale. Pharmacists, however, should check their state laws dealing with sulfonamide compounds. Several pharmaceutical manufacturers have introduced the new preparation under individual trade names.*

The new product holds great hope for the relief of acute and chronic sinus infections and other nasopharyngeal congestions accompanying or resulting from the common cold.

* Sulfedex (Abbott), Sulmefrin (Squibb), "Thizodrin" (Lilly).

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American Association for the Advancement of Science.—*Councilors*, E. F. Kelly, Washington, D. C.; G. L. Jenkins, Lafayette, Ind.; J. A. Reese, Lawrence, Kans.

National Drug Trade Conference Delegates.—G. D. Beal, Pittsburgh, Pa. (1945); E. F. Kelly, Washington, D. C. (1943); R. P. Fischelis, Trenton, N. J. (1944).

Committee on Medical Continuation, Conference on Inter-Allied Relations in the Field of Education.—*Chairman*, H. C. Muldoon, Pittsburgh, Pa.; G. L. Jenkins, Lafayette, Ind.; F. J. Goodrich, Seattle, Wash.

Committee on Prescription Tolerances—*Chairman*, J. K. Attwood, Jacksonville, Fla.; J. A. Reese, Lawrence, Kans.; C. T. Eidsmoe, Brookings, S. D.; M. J. Andrews, Baltimore, Md.; L. C. Zopf, Iowa City, Iowa; E. D. Stanley, Madison, Wis. This committee reports in full to the Section on Practical Pharmacy and Dispensing and in abstract to the House of Delegates.

Committee on Professional Relations.—*Chairman*, C. H. Evans, Warrenton, Ga.; A. L. Malmo, Duluth, Minn.; E. J. Boberg, Eau Claire, Wis.; C. J. Hamilton, Pompano, Fla.; L. Ruff, Columbus, Ohio; F. D. Lascoff, New York, N. Y.; W. D. Strother, Columbia, S. C.; Charles V. Selby, Clarksburg, W. Va.; F. W. Moudry, St. Paul, Minn.; T. D. Rowe, Richmond, Va.; R. A. Kuever, Iowa City, Iowa; L. W. Rising, Seattle, Wash.; R. C. Wilson, Athens, Ga.

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Journal of the

AMERICAN PHARMACEUTICAL ASSOCIATION

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Practical Pharmacy Edition

Editor
ROBERT W. RODMAN

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Committee on Publications
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Editorial

THE JUNE CONVENTIONS

DURING the next few weeks most of the state pharmaceutical associations will be holding their annual conventions. Shorn of their entertainment features and streamlined by the elimination of perfunctory reports, this year's conventions are war conferences in the true sense of the word devoted to the business of planning ways and means of maintaining necessary civilian pharmaceutical services under the stress of the emergency.

There are, of course, the increasingly difficult problems of shortages of supplies, lack of personnel, and conformity with price ceilings which must be met. These are basic problems which have been with us for the past year and, other than new developments, require little more than general consideration at this year's meeting. There are, however, a number of comparatively new questions which have developed from these three primary problems, and they should have full discussion when pharmacists meet in June and July.

The developments in connection with the manpower shortage are particularly important. The problem of securing pharmacists full-time or part-time has become increasingly difficult in many areas over the past year, in spite of the fact that the colleges of pharmacy have been in operation training the usual number of men and women as replacements for those pharmacists who are entering the armed forces or who have been lost through death, retirement, or other causes. The present provision for deferring students who have completed at least half of their training expires July 1, however, and unless it is renewed in some form, a considerable number of the colleges may be forced to close their doors for the duration. In the absence of a student training program to provide replacements, the present "tight" manpower situation in pharmacy may become really critical. It will be far more difficult to maintain standards without a flow of replacements into the field to supply adequately trained men and women.

It is estimated that about 6000 pharmacists are now in the Army and some 2500 are in the Navy. A considerable number of these are the younger men who were employees, and up until now the armed forces have done little more than take up the reserve in the field. With the creation of an armed force of 10,800,000 during 1943, and the declaration of Selective Service that every able-bodied man between the ages of 18 and 38, except a very few engaged in essential occupations, will be in uniform by the end of the year, it is apparent that more pharmacies are going to be closed this year than last. In fact, it has been estimated that by the end of 1943 there may be no more than 45,000 to 48,000 retail pharmacies in the country, and by the end of 1944 this number may be cut to a much lower level. The remaining pharmacies will have to serve a greater number of persons and pharmacists must make provision for carrying a greater load than they have in the past or even than they now carry.

The increased pressure resulting from the shortage of personnel will place a strain on standards of education, registration and even the quality of drugs and medical supplies and the quality of pharmaceutical services. The obligation of this profession to safeguard public health demands our

vigilance and united effort to maintain satisfactory standards.

Various areas of the country are undoubtedly due to be declared as "essential areas" in which employees are frozen; several areas have already been so defined. The freezing of pharmacists entails the development of rules and regulations under the authority of the War Manpower Commission and the adjustment of the operation of retail pharmacies to such rules. Luxury services not commonly required in the maintenance of health must be eliminated and pharmacists must be utilized primarily for the rendering of pharmaceutical services. Hours must be regulated, delivery services curtailed, and the pharmacy put on a war economy basis. It will be well for pharmacists to anticipate such developments and to be prepared to meet them satisfactorily.

Discussions of price ceilings and shortages of supplies should do more than scratch the surface of the problem. Less time should be devoted to demands for more merchandise and higher prices, and more attention devoted to effecting economies in drugstore operation and expanding those phases of pharmaceutical service in which there is little or no shortage of materials. Profits come from the margin between selling prices and operating costs and there is considerable evidence that many pharmacists can lower the overhead costs of their pharmacies by eliminating services or whole departments which are time and labor consuming and do not provide an adequate return. If the war lasts several years, the majority of retail pharmacies may be pared down to prescription departments and essential drugs, medicines, and sickroom supplies. It will be well to consider this situation now and prepare for the possibility. Every pharmacist should ask himself the question, "If my pharmacy is trimmed of all its non-pharmaceutical services and departments, what will I have left?" Now is the time to take such steps as will assure that there will be something left.

If the discussions and resolutions at this year's state pharmaceutical association conventions reflect an attitude of "what can we get out of the war effort" instead of "what can we do, more than we are doing now, to help win the war," the meetings will be not only a waste of time, but they will justify the public criticism they will receive. There never was a time when the individual and collective efforts of pharmacists were needed more than they are today, and many are responding in inspiring fashion. Unfortunately, many are not. The National Quinine Pool, for example, represents a specific job which has been placed before the pharmacists of the country, and although more than 100,000 ounces have been contributed thus far, only about 14,000 pharmacists have answered the call. At least 35,000 pharmacies are located in areas where there is little or no malaria, and some 21,000 of them have not as yet donated their stocks of quinine and other cinchona derivatives. If you are one, ask yourself "why"? It is not too late to send your stock off to the Pool and join the 14,000 who are doing their share to help our armed forces fight malaria and thus stay on their feet to fight the Axis. At least one state pharmaceutical association is making the price of admission to its annual dinner a contribution of quinine or a display of a "V" certificate.

The state associations have a big job to do this year; bigger than they had last year, for each month places an added strain on the civilian economy. They can do the job if every individual pharmacist does his share.

NATIONAL POOL HAS COLLECTED

OVER THREE TONS OF QUININE

Inspecting the "V" certificate which contributing pharmacists receive from the National Quinine Pool are, left to right: Charles R. Bohrer, Assistant Secretary of the AMERICAN PHARMACEUTICAL ASSOCIATION; Jesse Jones, Secretary of Commerce and Chairman of the Defense Supplies Corporation; Rear Admiral Ross T. McIntire, Surgeon General of the United States Navy; Capt. J. J. Kaveney, Medical Corps, U. S. N.; Congressman Andrew T. May, Chairman of the House Military Affairs Committee; and Pharmacist's Mate Marvin Adams.

PHARMACISTS of the United States have already contributed more than 110,000 ounces of quinine and other cinchona derivatives, or between three and four tons of these antimalarial drugs, to the National Quinine Pool, and the packages are still rolling in to the AMERICAN INSTITUTE OF PHARMACY in Washington. The amount on hand is the equivalent of some 9,600,000 five-grain doses and would have a market value of about $88,500 if you could buy it. With the Dutch East Indies in the hands of the Japs and our source of supply of this drug cut off, the quinine which has been collected is priceless, as it is irreplaceable.

On May 14, Rear Admiral Ross T. McIntire, Surgeon General of the U. S. Navy, Jesse Jones, Secretary of Commerce and Chairman of the Defense Supplies Corporation, and Andrew T. May, Chairman of the House Military Affairs Committee, visited the headquarters of the AMERICAN PHARMACEUTICAL ASSOCIATION to inspect the National Quinine Pool and to see the huge barrels and cases of the drugs which were awaiting shipment for reprocessing. They were tremendously impressed with what they saw, and following his visit, Admiral McIntire issued a statement congratulating the pharmacists of the country for the contributions which have been made thus far and urging that the effort

DO NOT ADDRESS THE SIGNER OF THIS LETTER
BUT ADDRESS YOUR REPLY TO
BUREAU OF MEDICINE AND SURGERY
NAVY DEPARTMENT, WASHINGTON, D. C.
AND REFER TO NO.

WASHINGTON, D.C. May 20, 1943.

Gentlemen:

Less than five months ago I made an appeal to the pharmacists of this country, through your organization, for contributions of quinine to the stockpile needed to protect the health of our armed forces.

Today, well over 100,000 ounces of quinine and other cinchona alkaloids have been received at the National Quinine Pool in your headquarters building. Through joint efforts of the War Production Board, the Defense Supplies Corporation and the American Pharmaceutical Association, aided by the press and radio, an unprecedented project has achieved a high measure of success.

But particularly do I wish to congratulate those who did the actual giving—the pharmacists and druggists of the United States. They are the men and women who, acting upon patriotic impulse, marshaled quinine stocks from their shelves and went to the trouble and expense of shipping these essential drugs to Washington. From crossroads communities and metropolitan shops, manufacturing companies and wholesale houses—from every corner of the Nation these quinine stocks have poured in, all bound for life-saving service at war.

The dividends of this cooperative campaign have already begun. Malaria is far from licked but its toll in disability is being held in check, thanks in great measure to the reinforcements that have been rushed to the fronts on land and sea by your great profession.

Yet the battle is not won. The effort must continue. The Anopheles mosquito extends no truce. Neither must American pharmacists let up in their enthusiastic drive. Quinine is still needed—critically. I trust that it will keep coming, that gains which have been made against malaria — our most important health hazard in this war — may be consolidated and our fighting men protected on their course to victory.

Very sincerely yours,

Ross T. McIntire

ROSS T. McINTIRE
Rear Admiral (MC) U.S.N.
The Surgeon General

The American Pharmaceutical Association
Constitution Avenue and 22nd Street, N.W.
Washington, D. C.

be continued. He said that although the dividends of this coöperative campaign have already begun, and disability from malaria is being held in check, the battle is not won and pharmacists must not let up in their enthusiastic drive. Quinine is still needed critically, said the Surgeon General, and must be kept coming in to the Pool in order that we may consolidate our gains against malaria.

The quantity of quinine and other antimalarial drugs which Admiral McIntire saw at the AMERICAN INSTITUTE OF PHARMACY on May 14 is, we hope, but the first shipment which will be made from the National Quinine Pool. Although the 110,000 ounces thus far pooled is a sizable amount and is a great tribute to the patriotism of the pharmacists of the United States, this quantity has been contributed by less than 14,000 pharmacists. It is estimated that there are some 35,000 pharmacists located in nonmalarial areas who could contribute to the Pool, and the project will not be completely successful until *everyone* has done his full share. When the National Quinine Pool was started, 100,000 ounces was the minimum amount which would justify the project. The Pool has passed this figure, but certainly the pharmacists of the country want to do more than fill a minimum quota. If we can double the amount in the Pool, it will be a real demonstration of the ability of this profession to meet the challenge which has been laid in its lap by the armed services of the country.

The dramatic North African victory would have been impossible if our troops had not had sufficient supplies of antimalarial drugs with which to fight disease in this malaria-ridden area, and our current and future military operations in the South Pacific theater are contingent upon our ability to keep malaria in check. The pharmacists of the country can play an important part in this task if they will just get behind it 100 percent. The job is 40 percent done now and it is up to the remaining 60 percent to "come through"

Charles R. Bohrer, who has directed the work of the National Quinine Pool for the AMERICAN PHARMACEUTICAL ASSOCIATION, shows the inspection party the more than three tons of drugs which have been collected thus far. Left to right: Dr. E. F. Kelly, Secretary of the A. PH. A., Admiral McIntire, Mr. Bohrer, Jesse Jones, and Congressman May.

Admiral McIntire and Mr. Jones examine bottles of Japanese, German, and Italian quinine which have been contributed to the National Quinine Pool by pharmacists. The visitors were particularly impressed with the number of unopened packages of quinine which pharmacists have contributed to the Pool in preference to returning them for credit to their sources of supply.

and make the National Quinine Pool the greatest possible success.

If you haven't sent your opened pakages of quinine and other cinchona derivatives in powder, pill, or capsule form off to the National Quinine Pool, do it today. If you have mislaid the folder you received from the War Production Board, send a letter to that effect at the same time you ship your quinine. You will receive a "V" certificate in acknowledgment of your gift. Each 5 grains of quinine you contribute means one dose for a soldier, sailor, or marine in a foreign land who needs it badly. The quinine in your prescription room is of priceless value to the armed forces for it is the means of prosecuting military operations in tropical areas. No stock of quinine is too small or too old—send whatever you have.

Send bulk quinine and other cinchona salts and alkaloids and tablets, capsules and pills of them. Do not send preparations of quinine or other cinchona derivatives which are in combination with other medical agents, such as Quinine and Urea Hydrochloride, Quinine and Urethane, Quinine Bismuth Iodide, etc. Do not send ampuls and parenteral medication or liquids.

Send your contribution to:

THE NATIONAL QUININE POOL

War Production Board

Defense Supplies Corporation

c/o American Pharmaceutical Association

2215 Constitution Ave., N. W.

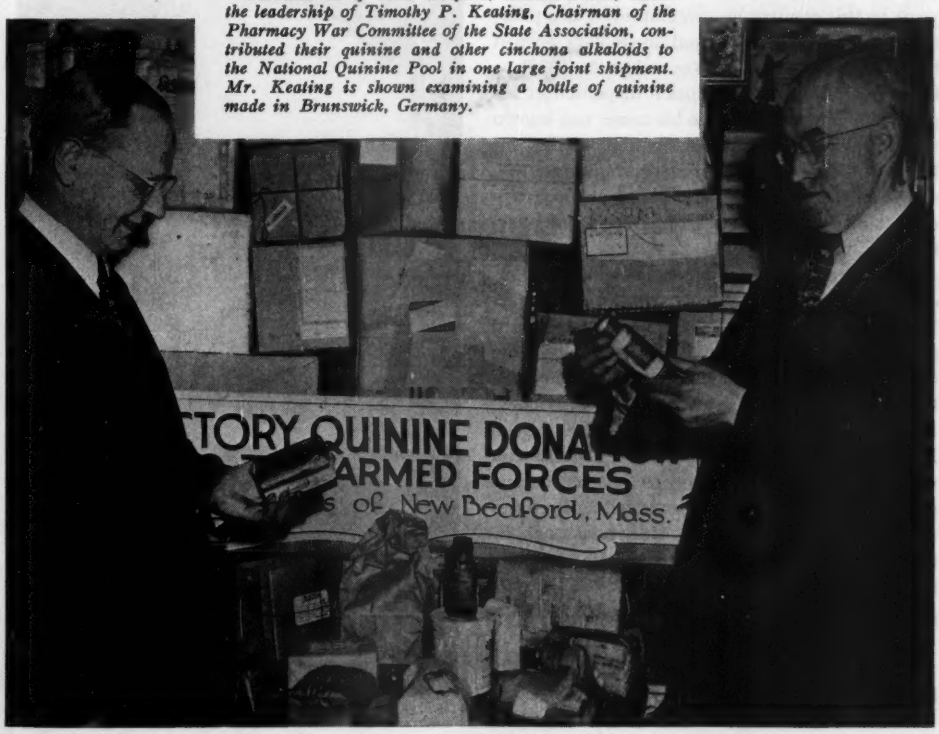
Washington 7, D. C.

The states which have contributed the largest amounts of quinine and other cinchona derivatives to the National Quinine Pool are those in which local and state pharmaceutical associations have made concerted efforts to collect the drugs from their members. Many organizations have made a store-to-store canvass in order to obtain the donations of those pharmacists who, although they fully plan to contribute to the pool, have put off the actual shipment from day to day. Those associations which as yet have not enlisted in the drive as organizations are urged to do so in order to put the pool "over the top." There is still a great deal of quinine and other antimalarial drugs in prescription rooms and hospital dispensaries and this stock can be started on its way to the battlefields of the world if local and state pharmaceutical associations will give the drive the time and attention it deserves. No more important project has been undertaken by organized pharmacy in the United States and it should be a source of great pride on the part of pharmaceutical associations to have their members participate to the greatest possible extent. The AMERICAN PHARMACEUTICAL ASSOCIATION has kept a complete record of the contributions of each participating pharmacist, and the records are filed by states. Thus, it is possible for any

Pharmacist's Mates A. W. Lewis and J. E. Zebal receive the huge coffin of quinine and other cinchona alkaloids contributed by the druggists of Brooklyn through the Consolidated Brooklyn Retail Pharmacists Association.

Officers of the Fort Wayne, Indiana, Drug Club as they shipped off some 3000 bottles of quinine and other antimalarial drugs to the National Quinine Pool.

Pharmacists of New Bedford, Massachusetts, under the leadership of Timothy P. Keating, Chairman of the Pharmacy War Committee of the State Association, contributed their quinine and other cinchona alkaloids to the National Quinine Pool in one large joint shipment. Mr. Keating is shown examining a bottle of quinine made in Brunswick, Germany.



state pharmaceutical association to find out just how many pharmacists in its state have contributed, by addressing an inquiry to Mr. Charles R. Bohrer, Assistant Secretary of the ASSOCIATION, 2215 Constitution Avenue, Washington, D. C. If the ASSOCIATION can be of assistance in planning Quinine Rallies, special bulletins, articles for state journals, or in suggesting ways and means of staging local or state drives, it will be happy to help.

The National Quinine Pool will go down in history as an important contribution to the winning of the war and every pharmacist who has taken part in the project will have the satisfaction of knowing that he did his share. If you haven't as yet sent your quinine in, won't you take time today to do it? Don't put it off until tomorrow or next week, do it now. Join the thousands of pharmacists who have answered the appeal of their country's fighting forces for quinine.

DR. J. LEON LASCOFF DIES

Dr. J. Leon Lascoff, practicing pharmacist of New York City, died at his home on May 4, 1943. He was seventy-five years of age.

Dr. Lascoff was born in Russia on August 28, 1867. He received his academic and professional education in his native land and came to the United States in 1892. During his first seven years in this country he was employed as a pharmacist in New York City and, in 1899, he opened his own pharmacy. On November 29, 1936, he filled the millionth prescription dispensed at his pharmacy and by this time his name was known to virtually every pharmacist of the country, for he had become a leader in association activities, educational endeavors, state board of pharmacy work, and in the practice of professional pharmacy.

Dr. Lascoff served as president of the AMERICAN PHARMACEUTICAL ASSOCIATION in 1938–1939. He was a member of the New York State Board of Pharmacy for more than thirty years, serving as its president three times. He was a trustee of the Columbia University College of Pharmacy. In 1937 he was the recipient of the Remington Honor Medal. During his lifetime, Dr. Lascoff was a frequent contributor to pharmaceutical publications and for years he served as Prescription Editor of *Drug Topics*. He served as chairman of the A. M. A. Committee on Recipe Book from 1920 until his death and he was responsible for the publication of the first three editions of the *Pharmaceutical Recipe Book*.

Dr. Lascoff is survived by his wife; his son and partner, Frederick D. Lascoff; and a grandson, Frederick D., Jr.

His name will go down in the history of American Pharmacy not merely for such tangible evidences of his work as the *Recipe Book* and his other publications, but for the inspiration which he gave thousands of pharmacists in the practice of their profession.

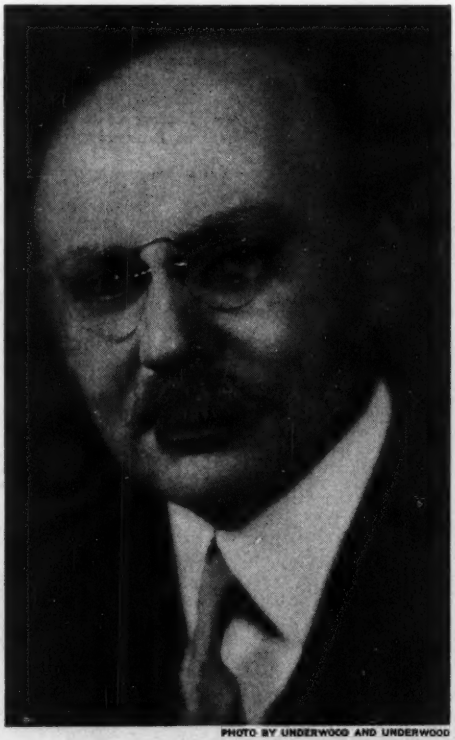


PHOTO BY UNDERWOOD AND UNDERWOOD

J. LEON LASCOFF

A. PH. A. TO MEET IN COLUMBUS

STREAMLINED, THREE-DAY MEETING SCHEDULED FOR SEPTEMBER 9, 10, AND 11. SECTIONS WILL RECEIVE PAPERS FOR PRESENTATION BY TITLE AND PUBLICATION

THE 91st Annual Meeting of the AMERICAN PHARMACEUTICAL ASSOCIATION will be held at the Deshler-Wallick Hotel, Columbus, Ohio, on Thursday, Friday, and Saturday, September 9, 10, and 11. Affiliated organizations, including the American Association of Colleges of Pharmacy, the National Association of Boards of Pharmacy, the American College of Apothecaries, the American Society of Hospital Pharmacists, the Conference of Law Enforcement Officials, and the Conference of Pharmaceutical Association Secretaries will hold their meetings in conjunction with the A. PH. A.

The selection of Columbus, Ohio, as the meeting place and the designation of September 9, 10, and 11 followed the recommendations of governmental agencies as to the time and place which would place the least possible burden on transportation facilities.

The 1943 meeting will be streamlined to the greatest possible degree and yet allow sufficient time for the consideration of the various war and post-war problems faced by pharmacists. General sessions of the ASSOCIATION and meetings of the House of Delegates and the Council will be held and the Sections will receive papers for presentation by title and subsequent publication in the Scientific and Practical Pharmacy Editions of the JOURNAL. Committee chairmen are asked to prepare and submit their reports well in advance of the meeting. It is hoped that members of this profession will not permit the pressure of the present emergency and the necessary curtailment of the convention program to interfere with the steady flow of scientific and professional contributions to the literature, but will prepare papers this year as they have in the past and place them in the hands of the respective Section secretaries listed below:

Scientific Section: F. E. Bibbins, 150 W. 64th Street, Indianapolis, Indiana.

Section on Education and Legislation: P. O. Clark, 601 Locust Street, Chillicothe, Missouri.

Section on Practical Pharmacy: R. W. Clark, 760 Belvidere Avenue, Westfield, New Jersey.

Section on Pharmaceutical Economics: S. Wilson, 801 Highland Avenue, New Castle, Pennsylvania.

Section on Historical Pharmacy: K. L. Kaufman, Medical College of Virginia, Richmond, Virginia.

Further details of the convention program will appear in THIS JOURNAL for June. In the meantime, contributors are urged to send the titles of their papers to the proper section secretary without delay.

MAKE YOUR HOTEL AND TRAIN RESERVATIONS EARLY

PHARMACY CORPS BILL REPORTED

MILITARY AFFAIRS COMMITTEE OF THE HOUSE RECOMMENDS PASSAGE OF H. R. 997. WRITE YOUR CONGRESSMAN ASKING HIS FAVORABLE VOTE WHEN BILL COMES UP FOR ACTION

THE Pharmacy Corps Bill, H. R. 997, has been reported to the House of Representatives by the Committee on Military Affairs with the recommendation that it be passed. Congressman Carl T. Durham, of North Carolina, sponsor of the Bill in the House, submitted the report of the Committee favoring the legislation and the Bill was committed to the Committee of the Whole House on the State of the Union to await action.

With the Bill thus over its first hurdle, the support of practicing pharmacists is needed to assist in the next step: its passage by the House. Every pharmacist who is interested in the improvement of pharmaceutical service in the army should write his Congressman asking him to vote in favor of the legislation when it comes up for action. In the report of the Committee on Military Affairs, printed below, the objectives of the Bill and the mechanics to bring about their fulfillment are carefully explained and pharmacists should study this material thoroughly and base their appeals to Congressmen on the facts contained therein. It is not enough that you tell Congressmen that you favor the legislation; you must give them reasons why you favor it.

If you have contacts with your local newspapers, call their attention to the report of the House Committee on Military Affairs and ask their support through news stories and an editorial. Send clippings of such material to your Congressmen. Obtain the support of other professional groups, civic and service organizations, influential citizens of your community, and your customers. Ask them to write to their Representatives in Congress in support of the Bill. An overwhelming vote in the House will give the Bill a good start toward approval in the Senate, so leave no stone unturned in your efforts to convince Congressmen of the need for this legislation.

The text of the Report of the Committee on Military Affairs of the House as presented by Congressman Carl T. Durham, sponsor of the Bill, is as follows:

REPORT

The Committee on Military Affairs, to whom was referred the bill (H. R. 997) to amend certain provisions of the National Defense Act of June 3, 1916, as amended, relating to the Medical Department of the Regular Army, having considered the same, submit the following report thereon, with the recommendation that it do pass with the following amendments:

On page 2, line 3, strike out the words "second sentence" and insert in lieu thereof "third sentence".

On page 2, line 20, strike out "24 (c)" and insert in lieu thereof "24c".

On page 3, line 6, strike out "24 (e)" and insert in lieu thereof "24e".

On page 3, line 15, strike out "47 (c)" and insert in lieu thereof "47c".

On page 4, line 14, strike out the period and insert in lieu thereof a colon, and insert a period after the quotation marks.

H. R. 997 places the Pharmacy Corps on the same basis as the Medical, Dental, and Veterinary Corps of the Medical Department of the Regular Army now occupy in their respective fields.

The purpose of the legislation, briefly stated, is to coördinate under one organization all of the pharmaceutical services rendered in the Army including the purchase, examination, shipment, storage, and standardization of the drugs and medical supplies required by the Army, and their compounding and dispensing, by providing in a permanent Pharmacy Corps and its Reserve Corps, a group of professionally educated, experienced, and capable commissioned pharmacists who can effectively supervise and discharge these important and essential health services. They will also direct the further expansion of the corps in the Army of the United States in time of emergency such as we are now going through.

Had this legislation been in effect before the present emergency, as many additional pharmacists as might have been required for the expanded Army could have been commissioned on the same basis as the additional medical, dental, and veterinary officers have been commissioned.

It should be emphasized that H. R. 997 will not provide for the commissioning of every pharmacist who may serve in the Army but only for that number which will be required.

It is the conviction of the committee that pharmaceutical service necessary to the health and welfare of our soldiers is sufficiently important and extensive to warrant the sole attention and direction of a Pharmacy Corps in the Regular Army supplemented by trained enlisted personnel and a Pharmacy Corps Reserve.

It is imperative, in our opinion, to have a trained group to organize promptly and direct the expanded pharmaceutical service required in time of emergency.

The vital importance of having the necessary drugs and medical supplies when and where required has been emphasized by recent experiences.

In 1936 the first legislative step was taken toward the objective which it is now planned to reach through the enactment into law of H. R. 997. In that year, and on the intiative of the Medical Department of the Army, the National Defense Act was amended to provide that only pharmacists with certain educational requirements could be commissioned in the Medical Administrative Corps in the Regular Army which corps then consisted of 72 commissioned officers. The number of pharmacists so commissioned was limited to 16 which was the number of vacancies then existing.

In 1939 the National Defense Act was again amended on the initiative of the Medical Department of the Army to provide that the Medical Administrative Corps in the Regular Army should consist of the 16 pharmacy officers referred to above and the corps then became in fact a pharmacy corps.

H. R. 997 was drafted to accord with the National Defense Act and has four general provisions, as follows:

(1) To change the name of the Medical Administrative Corps in the Regular Army to that of the Pharmacy Corps. The Medical Administrative Corps in the Regular Army now consists of 16 commissioned pharmacists and only pharmacists are eligible to commissions in the corps. It seems only proper that this corps should be a professional organization similar to the Medical, Dental, and Veterinary Corps and that the name of the corps should be in accord with its character and purpose. The enactment of H. R. 997 will not create a new corps but changes the name of an existing corps.

(2) The number of officers in the corps is increased from 16 to 72. The number of officers commissioned in the various corps of the Regular Army is based on the personnel of the Regular Army at the time the National Defense Act was adopted and amended. The personnel of the Medical Administrative Corps was 72 officers before it was changed to consist of pharmacists only and therefore the legislation provides that the personnel shall be restored to the original number. The Pharmacy Corps will supervise and direct the pharmaceutical work in the Regular Army with the assistance of an adequate enlisted personnel, and will provide the nucleus around which the corps may be expanded in time of emergency.

(3) It provides that an officer of the Pharmacy Corps shall be promoted on the same basis as the officers in the other corps of the Medical Department. Officers of the present Medical Administrative Corps of the Regular Army can advance only to the rank of captain. Pharmacists will be commissioned in the Pharmacy Corps in the grade of second lieutenant. They will advance to the grade of first lieutenant after 3 years' service, to the grade of captain after 6 years' service, to the grade of major after 12 years' service, to the grade of lieutenant colonel after 20 years' service, and to the grade of colonel after 26 years' service. These officers will be examined for promotion in accordance with laws governing the examination of officers of the Medical Corps for promotion.

(4) It provides for a Pharmacy Reserve Corps in accordance with the requirements of the National Defense Act. Pharmacists who are commissioned in this Reserve in time of peace will be required to take a certain amount of training and to be prepared to enter active service if required. These Reserve officers are commissioned in the Army of the United States and may be called to active duty under the provisions of the National Defense Act.

H. R. 997 also provides that pharmacy students may be admitted to a pharmacy unit of the Reserve Officers' Training Corps for a period of 2 years and may be selected for advance training on the basis of their record under the conditions applying to the medical, dental, and veterinary students. Upon completion of the advance course and graduation these students will be

eligible to commissions in the Pharmacy Reserve Corps.

It is expected that a Pharmacy Corps, properly organized, can effect savings in connection with the purchase, storage, and distribution of drugs and medical supplies which will fully justify its establishment in addition to the improved service which it can guarantee. The Pharmacy Corps can also be of great service in connection with the use and disposition of the large stocks of drugs and medical supplies which will in all probability be on hand when the present emergency is over.

It has been difficult to learn just how many licensed pharmacists are serving in the Army of the United States but the number must be in excess of 6000. They enter the Army under the Selective Service Act and are detailed to the Medical Department. After taking the basic training, they are so far as possible given pharmaceutical duties or related duties and are given technical ratings up to that of technical sergeant. They are eligible for selection for officer training as are all soldiers, but if commissioned they are not commissioned as pharmacists and generally are not employed as pharmacists.

At the same time, soldiers without pharmaceutical experience, are given a 90-day technical course in pharmacy in order that these pharmacy technicians should be available as assistants to registered pharmacists.

Dr. H. Evert Kendig, Chairman of the Committee on Pharmacy Corps in the Regular Army, representing the A. Ph. A., N. A. R. D., A. A. C. P., and the N. A. B. P.

Considerable evidence was submitted to show that inductees who are registered pharmacists are being employed for other than pharmaceutical duties in the Army when, at the same time, these 90-day trainees are discharging pharmaceutical duties which go beyond their training.

It is believed that this undesirable and wasteful procedure can be corrected to the best advantage by the organization of a Pharmacy Corps which can be held responsible for an adequate pharmaceutical service and personnel just as is true of the Medical, Dental, and Veterinary Corps in their respective fields.

Because H. R. 997 directly specifies the Regular Army only, it has been referred to as a peacetime measure and for this reason it has been recommended that action on the measure should not be taken in time of war. As a matter of fact, H. R. 997 affects both the Regular Army and the Army of the United States, since the latter is an expansion of the Regular Army in time of war.

This being true, H. R. 997 is a wartime as well as a peacetime measure and would become effective immediately following its enactment.

H. R. 997 has received strong endorsement from various health groups and the legislatures of 20 States have now adopted concurrent resolutions memorializing the Congress to promptly enact legislation establishing a Pharmacy Corps in the Army.

It is true that such service varies in certain respects from the civilian pharmaceutical service especially in combat areas. They are, however, basically the same and require the same trained, responsible personnel to insure that they are effective and that they are safe. It is intended to guarantee by this legislation that our soldiers will receive as good pharmaceutical service and the same protection in the use of drugs and medical supplies as every citizen is guaranteed under the pharmacy laws of the States of the Union. Certainly our soldiers deserve every health service and protection that is available especially in view of the added risks to which soldiers are exposed and the urgent necessity to keep them well and in the best possible physical condition for war and post-war services.

CHANGES IN EXISTING LAW

In compliance with paragraph 2a of rule XIII of the Rules of the House of Representatives, changes in the National Defense Act of June 3,

1916, as amended, made by the bill are shown as follows (matter proposed to be omitted is enclosed in black brackets; new matter is printed in italics; matter in which no change is proposed is shown in roman):

Section 10, first sentence of first paragraph:

The Medical Department shall consist of one Surgeon General with the rank of major general, two assistants with the rank of brigadier general, the Medical Corps, the Dental Corps, the Veterinary Corps, the [Medical Administrative] *Pharmacy* Corps, a number of enlisted men which until June 30, 1921, shall not exceed 5 per centum of the authorized enlisted strength and thereafter 5 per centum of the actual strength, commissioned and enlisted of the Regular Army, the Army Nurse Corps as now constituted by law, and such contract surgeons as are now authorized by law.

Section 10, second sentence of first paragraph:

The number of officers of the Medical Corps shall be [six and one-half for every thousand] *one thousand four hundred and twenty-four*, and of the [Medical Administrative Corps, one for every two thousand, of the total enlisted strength of the Regular Army, authorized from time to time, and within the peace strength permitted by this Act] *Pharmacy Corps seventy-two*.

Section 10, third sentence of second paragraph:

An officer of the [Medical Administrative] *Pharmacy* Corps shall be promoted to the grade of first lieutenant after [five] *three* years' service, to the grade of captain after [ten] *six* years' service, *to the grade of major after twelve years' service, to the grade of lieutenant colonel after twenty years' service, and to the grade of colonel after twenty-six years' service.*

Section 10, last sentence of third paragraph:

For purposes of future promotion, any person so appointed in the Medical or Dental Corps shall be considered as having had, on the date of appointment, service equal to that of the junior officer of his grade and corps now in the Regular Army; and in the Veterinary or [Medical Administrative Corps,] *Pharmacy Corps* sufficient service to bring him to his grade under the rules established in this section.

Section 24c, last two sentences:

Existing laws providing for the examination of officers for promotion are hereby repealed, except those relating to physical examination, which shall continue to be required for promotion to all grades below that of brigadier general, and except also those governing the examination of officers of the Medical, Dental, *Pharmacy*, and Veterinary Corps. Officers of said [three] *four* corps shall be examined in accordance with laws governing examination of officers of the Medical Corps [, second lieutenants of the Veterinary Corps being subject to the same provisions as first lieutenants].

Section 24e, fourth sentence:

Appointments in the [Medical Administrative] *Pharmacy* Corps shall be made in the grade of second lieutenant from pharmacists between [the] ages of twenty-one and thirty-two years who are graduates of recognized schools or colleges of pharmacy requiring four years of instruction for graduation, under such regulations and after such examinations as the Secretary of War shall prescribe.

Section 47c, first and second provisos:

Provided, That any medical, dental, *pharmacy*, or veterinary student may be admitted to a Medical, Dental, *Pharmacy*, or Veterinary Corps unit of the Reserve Officers' Training Corps for a course of training at the rate of ninety hours of instruction per annum for the four college years, and if at the end of two years of such training he has been selected by the professor of military science and tactics and the head of the institution for advanced training, and has agreed in writing to continue in the Reserve Officers' Training Corps for the remainder of his course at the institution, and has agreed in writing to pursue the course in camp training prescribed by the Secretary of War, he may be furnished, at the expense of the United States, with commutation of subsistence at such rate not exceeding the cost of the garrison ration prescribed for the Army, as may be fixed by the Secretary of War, during the remainder of his service in the Reserve Officers' Training Corps, not exceeding two years: *Provided further*, That any Reserve officer who is also a medical, dental, *pharmacy*, or veterinary student may be admitted to such Medical, Dental, *Pharmacy*, or Veterinary Corps unit for such training, under such rules and regulations as the Secretary of War may prescribe.

WRITE YOUR CONGRESSMAN TODAY ON BEHALF OF THE PHARMACY CORPS BILL

A RAPIDLY ABSORBED
ELIXIR OF SODIUM BARBITAL

NEW STUDY INDICATES THAT GLYCERIN IN ELIXIRS DELAYS EMPTYING TIME OF STOMACH AND INTERFERES WITH THE DRUG ABSORPTION. FORMULA FOR GLYCERIN-FREE PRODUCT SUGGESTED BY INVESTIGATORS

WHILE studying the comparative rate of gastrointestinal absorption of barbital preparations, Victor P. Seeberg and James M. Dille, of the Department of Pharmacology, College of Pharmacy, University of Washington, recently found that Elixir of Barbital, N. F., was very poorly absorbed (*J. A. Ph. A., Sci. Ed., 32:5 (May, 1943) 133–138*). Their study was made by administering tablets of barbital, tablets of sodium barbital, and elixir of barbital to cats, allowing a period of thirty minutes for absorption to take place, and then examining the stomach, intestine, and colon for unabsorbed barbital. They found that only 28.6 percent of the sodium barbital remained in the gastrointestinal tract, while 69 per cent of the barbital from the tablets was unabsorbed, and 74.6 percent of the barbital from the elixir was unabsorbed. In other words, although elixirs are generally considered to be a readily absorbed form of medication, only one-quarter of the barbital from elixir of barbital was absorbed during the first half-hour after administration. The delayed absorption was also reflected in a low blood concentration of barbiturate and by the degree of depression produced by the preparation.

The attention of the researchers was further attracted by the fact that after the administration of tablets of barbital or sodium barbital the animal's stomach was collapsed and most of the drug had passed into the intestine during the thirty-minute period. In the case of animals which had been given elixir of barbital, however, the stomach was distended and filled with the elixir and the water which had been administered with it, indicating that very little of the preparation had reached the intestine.

It was apparent that some substance present in the elixir delayed the emptying time of the stomach, and further study indicated that the 62 percent glycerin content was the cause of the trouble. Although the dose of elixir of barbital as listed in the N. F. would contain only 2.6 cc. of glycerin, this dose contains but 140 mg. of barbital, a drug for which the U. S. P. gives a dose of 300 mg., and which physicians often prescribe in as high a dose as 0.9 Gm. (15 grains). The U. S. P. dose of glycerin is 4 cc., and if the doctor prescribed sufficient elixir of barbital for the patient to receive 0.9 Gm. of barbital, 16.6 cc. of glycerin would be administered—4 times the U. S. P. dose of this substance.

This investigation led to the development of a glycerin-free elixir of barbital, or, because of its greater solubility, of sodium barbital. One of the investigators, Victor P. Seeberg, developed the following formula:

Sodium barbital	38. Gm.
Caramel	20. Gm.
Compound spirit of vanillin	30. cc.
Syrup	375. cc.
Purified talc	30. Gm.
Alcohol, Distilled water, $\overline{aa}$, *q. s.*	1000. cc.

To 500 cc. of equal parts of alcohol and water, add the compound spirit of vanillin and the syrup, mix the talc intimately with the liquid, and filter, returning the first portions of the filtrate until a clear liquid is obtained. Dissolve the sodium barbital and caramel in the filtrate and add sufficient alcohol and water to make the product measure 1000 cc.

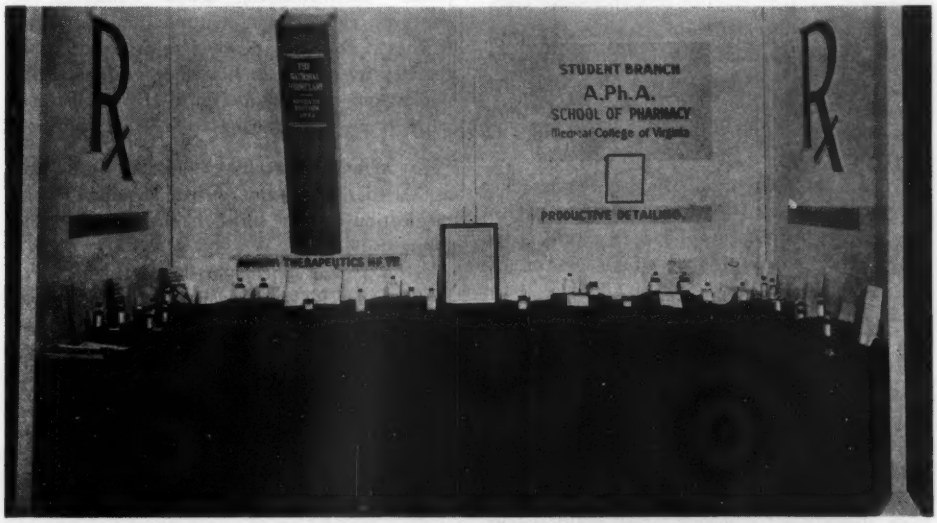
Filtration with talc was found necessary in order to make a clear preparation after the compound spirit of vanillin was added. This procedure is the same as that used in Aromatic Elixir, U. S. P., in which compound spirit of orange is added to a similar concentration of sugar and alcohol in water.

The flavoring and coloring agents are the same as those used in the N. F. elixir, and the alcohol content is 22–24 percent, the usual concentration of elixirs. There is little difference in color and flavor between the elixir of sodium barbital and the elixir of barbital of the N. F.

When the glycerin-free elixir of sodium barbital was administered to cats, and the gastrointestinal contents examined a half hour later, only 41.8 percent of the sodium barbital was found to have been unabsorbed. Thus, 58.2 percent of the sodium barbital was absorbed from the new elixir, while only 25.4 percent of the barbital was absorbed from the N. F. elixir of barbital. The stomachs of cats which had received the glycerin-free elixir of sodium barbital were not distended, indicating that the preparation did not delay the emptying time of the organ.

The more rapid absorption of the elixir of sodium barbital was also reflected in the concentration of the barbiturate in the blood and in the degree of depression observed at the end of the absorption period. The average blood concentration of barbiturate one-half hour after administration of elixir of barbital was 12.4 mg. percent; the average concentration after the administration of elixir of sodium barbital was 20.1 mg. percent. In judging the stage of depression produced by the two preparations, with the elixir of barbital 60 percent of the cats were unable to stand but were able to lift their heads, and 40 percent of the cats were unable to lift their heads, but the corneal reflex was present. With the elixir of sodium barbital, 66 percent of the cats were unable to lift their heads, but the corneal reflex was present, while 34 percent of the cats were in a state of deep narcosis with the corneal reflex absent.

Editor's Note: This work on elixir of barbital and elixir of sodium barbital is important, not alone because it has led to the development of a new, more rapidly absorbed barbiturate preparation, but because it suggests the inadvisability of using glycerin in elixirs in general. If glycerin delays the emptying time of the stomach and interferes with the absorption of barbital, it is possible that the same may be true of elixir of phenobarbital and other elixirs. It serves to emphasize, also, that in developing new, more convenient, or more pleasant dosage forms for drugs, be they elixirs, mixtures, or ointments, it is imperative that pharmacists guard against the use of any substance as a vehicle which will interfere with the desired therapeutic effectiveness of the drug in question.



At the recent convention of the Virginia Pharmaceutical Association, the Student Branch of the AMERICAN PHARMACEUTICAL ASSOCIATION *at the Medical College of Virginia sponsored the exhibit shown above. Sections of the exhibit were devoted to displays of new drugs of the National Formulary, preparations which have been discussed in the Productive Detailing department of* THIS JOURNAL, *syrup replacements, and glycerin replacements. The display aroused a great deal of interest on the part of pharmacists attending the meeting.*

A GUIDE TO SERVING THE PRACTICING DENTIST

THIRTEEN PAGES OF THE NEW RECIPE BOOK ARE DEVOTED TO DEPENDABLE FORMULAS FOR PREPARATIONS DENTISTS USE OR PRESCRIBE. EACH HAS BEEN DEVELOPED THROUGH STUDY AND EXPERIENCE OVER THE PAST TEN YEARS BY BOTH PHARMACISTS AND DENTISTS

BECAUSE dentists in the past have known comparatively little about drugs, and pharmacists have known even less about dental procedures, the members of these two professions have never worked together to the extent that the best interests of the public would be served. By and large, the average dentist has practiced his profession with the use of high-priced, fancifully named solutions, pastes, and powders purchased from dental supply houses, and the average pharmacist has limited his knowledge and interest in oral hygiene and therapeutics to those tooth-brushes, dentifrices and mouthwashes he stocked.

During the past decade, however, there has developed a greater appreciation on the part of dentists and pharmacists of how they can expand the quality and character of their services through the service of the other. No small share of the credit for this development is due to Dr. George C. Schicks, Assistant Dean of the Rutgers University College of Pharmacy, Newark, N. J., who has been a leading exponent of dental pharmacy. Dr. Schicks has had the opportunity of giving innumerable lectures to dentists, holding clinics to teach them prescription writing, and of writing many articles on the subject for both dental and pharmaceutical publications. His association with dentists has given him an exceptional opportunity to study their pharmaceutical needs and to develop therapeutic agents which they can use to enhance their treatment of oral conditions, by making them more effective, and less costly. Many of his formulas have been published under the section of the Council on Dental Therapeutics in the *Journal of the American Dental Association* and in *Accepted Dental Remedies*, published by that organization.

Thirteen pages of the new Third Edition of The Pharmaceutical Recipe Book are devoted to a section on Dental Formulas as compiled by Dr. Schicks on the basis of demand of pharmacists and dentists for more or less popularly used preparations. Although most of these formulas have appeared in one or another publication during the past ten years, the Recipe Book offers both pharmacists and dentists the opportunity of having them all together, in one place, ready for instant reference and use.

The Dental Formulas section of the new Recipe Book is divided into two parts: one devoted to preparations for the use of the dentists' patients, including toothpowders and pastes, mouthwashes, dental adhesives for dentures, cleaners for dentures, and medicated troches; the other devoted to preparations for the dentist to use in his office. Of particular note among the formulas for use by the dentists' patients are the following:

1. A toothpaste base which can be flavored as desired, made to any consistency, and to which medication can be added if the dentist wishes to prescribe such.
2. A peppermint-flavored sodium perborate toothpowder for use in those conditions where such medication is desired by the dentist.
3. A liquid dentifrice of the type which appeals to children.
4. A cinnamon-flavored salt preparation which is dissolved in water and used as a mouthwash. This product is pink. The fact that its color fades when it is used in the oral cavity is often mentioned, but it has no therapeutic significance. The preparation is dispensed in dry form, one teaspoonful being added to a cup of warm water before using. It makes a very convenient product for travelers.

Among the preparations for use by the dentist are the following:

1. A pink-colored, agreeably flavored abrasive paste of pumice suspended in glycerite of starch. The color of this paste, used by the dentist in cleaning the teeth of patients, masks the color of blood and thus prevents the patient from becoming upset if his gums should bleed slightly during the procedure. The consistency of the paste is such that it will stay under the dentist's brush and will not be thrown off as it whirls.

2. For the dentist who caters to particular patients, there is a formula for an abrasive powder which the pharmacist packs in gelatin capsules. The dentist empties the contents of one capsule in a dappan dish (a mixing dish) and moistens it with a few drops of water or glycerin. The powder is also colored pink to cover bleeding.

3. An effective topical anesthetic for the dentist to apply a minute or two before he inserts a hypodermic needle into the gum.

4. An iodine disclosing solution which aids in the detection of decay when it is applied to the surface of the teeth. Dentists use such solutions in making examinations and routine check-ups of the mouths of patients.

5. A solution of neoarsphenamine in glycerin for the treatment of Vincent's infection.

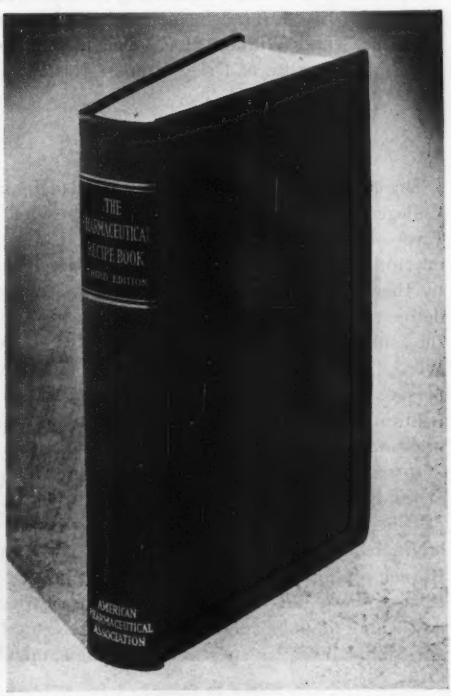
6. Three solutions for the hypersensitive dentin, including the ether-alcohol-thymol formula developed by Dr. Hartman, of New York City, a few years ago.

7. A formaldehyde solution for the cold sterilization of dental instruments. The solution contains no alcohol and can, therefore, be made rather inexpensively.

These are but a few of the 43 dental formulas which appear in the new Third Edition of the Pharmaceutical Recipe Book, each an opportunity for the pharmacist who wishes to expand his professional services.

If you are one of the pharmacists who as yet has not investigated the possibilities of increasing his prescription practice through the dentists of his community, give some time and thought to it at your earliest opportunity. If you confine your detailing and your prescription services to physicians, you are supplying only a part of the pharmaceutical needs of the neighborhood. The successful pharmacist is the one who supplies all the pharmaceutical requirements of his community: the home remedies which the customer purchases for his own use and the drugs and pharmaceuticals needed by the general medical practitioner, the specialist, the dentist, the podiatrist, and the veterinarian. If this is your objective, you will find the new Recipe Book a valuable guide in the application of your pharmaceutical knowledge to the needs of these members of the other health professions.

The Third Edition of the Pharmaceutical Recipe Book is available at $5.00 a copy from the Mack Printing Company, Easton, Pa. Dues-paid active members of the AMERICAN PHARMACEUTICAL ASSOCIATION may purchase R. B. III at $3.50 a copy, but they must order their copies through the ASSOCIATION. A. PH. A. members, therefore, should address their orders to the ASSOCIATION, at 2215 Constitution Ave., Washington, D. C.; and nonmembers should address their orders to the Mack Printing Company, Book Department, Easton, Pa. Checks or money orders must accompany orders. It is important to note carefully these instructions as no rebate can be made to members who inadvertently order their copies from the Mack Company instead of through the ASSOCIATION.



A. PH. A. BRANCH SPONSORS
MICHIGAN ACADEMY OF PHARMACY

NEW ORGANIZATION FORMED TO PROMOTE PROFESSIONAL PHARMACY. FIRST CONFERENCE HELD APRIL 29 WELL ATTENDED

"IF the pharmacist of today is to maintain or improve his place in useful service, he must take advantage of every opportunity to improve his present education lest he be left standing on the curb when the parade has passed." In these words, President Ernest R. Jones, of Detroit, summed up the reasons for the founding of the Michigan Academy of Pharmacy at its First Conference, held on April 29.

One hundred and sixty persons attended the science lectures at the afternoon session of the Conference where they heard Dr. Florian E. Schmidt speak on "The Anemias," Dr. John W. Hirshfeld discuss "The Modern Treatment of Burns," Dr. Warren B. Cooksey describe the place of "Blood Transfusion and Plasma in Wartime," and William H. Mohrhoff describe "The Manufacture of Dried Human Plasma for the Armed Forces."

DR. GRIFFITH SPEAKS

Dr. Ivor Griffith, President of the Philadelphia College of Pharmacy and Science, and President-Elect of the AMERICAN PHARMACEUTICAL ASSOCIATION, was honor guest at a dinner tendered by the Academy, and at the evening session he delivered the first Scoville Memorial Lecture on the subject, "Chemotherapy—Today's Magic Word," to an audience of two hundred and fifty persons. The lecture commemorates the contributions of Dr. Wilbur Lincoln Scoville, first president of the Michigan Branch of the A. PH. A.

In explaining the purposes of the new Academy at the First Conference, President Jones said:

"The Michigan Academy of Pharmacy was originated by and is sponsored by the Michigan Branch of the AMERICAN PHARMACEUTICAL ASSOCIATION. We feel that we have begun a rather novel and unique experiment which the attendance indicates is a successful one that might well be emulated by other branches or organizations which need something to "pep-up" the interest of their members.

"To get the full history of the Academy, we must go back to 1914. In that year, Detroit was host to the national convention of the AMERICAN PHARMACEUTICAL ASSOCIATION. As usual, such conventions stimulate much pharmaceutical interest. Accordingly, in the early fall of 1914, the Detroit Branch, or what was later given the more appropriate name of Michigan Branch of the A. PH. A., was formed. It had a charter membership of approximately 100 members and I am proud to have been one of them. For the first two or three years the Branch fluorished, but gradually the interest and attendance began to dwindle. It was only through the exceptional interest of such faithful ones as Secretary Bialk, Walter Chase, Leonard Seltzer, and a few others that its identity was maintained during the ensuing period.

"In 1940, Detroit was awarded the national A. PH. A. convention for the following year and in August, 1941, we were hosts to the largest and greatest A. PH. A. convention ever held.

"We capitalized on this, of course, to increase our Branch membership. Prior to the convention we took in over 200 new A. PH. A. members, giving us a total Branch membership of over 300, and an increase of 260 in three years.

MEETING A NEED

"But in this success the older members, who had witnessed the previous retrogression of the newly formed Branch in 1914, sensed a lurking danger. We were in danger of becoming 'warkus birds.' The mythical warkus bird, as many of you know, always flew backwards because he was more interested in seeing where he had been than where he was going. Something different must be done if the Branch was to continue to flourish and retain its membership. The usual monthly program would be insufficient to hold the interest, we knew, because we had already experienced a previous failure.

"Accordingly, a motion was introduced at the February, 1942 meeting of the Branch calling for

the appointment of an Advancement Committee to carry on a study and report ways and means for continuing and increasing interest in the Michigan Branch of the AMERICAN PHARMACEUTICAL ASSOCIATION. This Committee made several definite recommendations at the April meeting, one of which provided for a permanent committee to organize and carry on a series of lectures on subjects of professional pharmaceutical interest.

A BROAD CHARTER

"Most of us have to creep before we can walk and so it was with this committee, but after several meetings, the idea of the Michigan Academy of Pharmacy was developed. Accordingly we incorporated December 1, 1942, under the laws of Michigan as a non-profit organization sponsored by the Michigan Branch of the A. PH. A. Our charter is broad and permits us to engage in any activities benefiting professional pharmacy. This will be done by means of lectures, short seminars, printed articles, or whatever other interests may be considered expedient by the Directors.

"The type of lectures we have provided at our First Conference are referred to in many places as 'Refresher Courses.' We do not like this term. If you will look in your dictionary you will find that the first definition for 'refresh' is 'to make fresh again.' In other words you review something you once knew but probably have forgotten. I doubt that there are many who attended the lectures at the First Conference who could say that they were anything but new material to them.

"But there is a second definition which says that to 'refresh' is to 'invigorate' Only in this sense could such a term be applied to our first Conference. Yes, one of our purposes is to reinvigorate by presenting such programs as you were privileged to listen to this afternoon.

PHARMACY IS CHANGING

"Everyone knows the profession of pharmacy is changing. It is ascending to a higher level. Useless and unreliable vegetable drugs are giving way to more potent and dependable chemicals, endocrine products, and biologicals. 'Chemotherapy'—a new word to many of us—is forging ahead by leaps and bounds. The pharmacist of tomorrow must be educated along different and higher lines than in the past. Not much longer will he be able to brag about being a 'good pill-roller' for that art, too, is already passing.

"What the Academy has offered in its First Conference is only a beginning. It is the hope of the officers and directors that this modest one-day program may eventually develop into sessions of several days or even a week's program.

"It is a prerequisite for membership in the Academy that one be a member of the AMERICAN PHARMACEUTICAL ASSOCIATION and of the Michigan Branch. He must be in good financial standing in both organizations Anyone qualified under these conditions is welcome as a member of the Academy. Until May 31, he may be accepted as a charter member. After May 31 membership in the Academy can be obtained by invitation and qualification only.

173 CHARTER MEMBERS

"The Michigan A. PH. A. Branch membership on January 1, 1943, was slightly less than 300 persons. Since that time, and due almost entirely to the Academy movement, the Branch and A. PH. A. have gained 65 new members. This is as much and more than can be credited to many national conventions. The Branch now has a total of 358 members of which 173 have already become charter members of the Academy."

ERNEST R. JONES

The Hospital Pharmacist

A STUDY OF HOW BURNS ARE TREATED TODAY

by SISTER MARY LUDMILLA, S.S.M.

PHARMACIST, FIRMIN DESLOGE HOSPITAL, ST. LOUIS, MISSOURI

ANALYSIS OF HOSPITAL RECORDS OF 48 BURN CASES ADMITTED DURING 1940 AND 1941 SHOWS TANNIC ACID THERAPY THE MOST WIDELY USED TREATMENT, BUT RECENT MEDICAL LITERATURE SUGGESTS MANY NEW METHODS

METHODS of treating burns today should be a topic of interest to every hospital pharmacist. Our country is geared to war production, and with an increase in industrial hazards brought about by the tremendous step-up in the manufacture of munitions, there is scarcely a hospital in any area that may not be called upon to care for such cases. Besides, in our program for civilian defense, we should keep in mind that the flash of the exploding bomb and the fires started by incendiary bombs make burns one of the most important of air raid casualties.[1]

This paper comprises (1) a study of records of burn cases that were admitted to two of a group of hospitals,* with which the writer is associated, during the years 1940 and 1941; (2) a review of articles in recent medical literature discussing the treatment of burns.

The number of hospital records studied was 48. This represented 0.19 percent of the total number of patients admitted. Of the 48 records studied, 32.7 percent were records of children under twelve years of age. In this study, special attention was given only to the medicinal preparations used. Other measures, such as surgery, physical therapy, and so forth, were given only passing notice.

According to the classification of the Standard Nomenclature,[2] 5 were first degree burns only, 9 were third degree burns, and the others were varied combinations of first and second, to second and third degree burns.

Among these patients there were 3 deaths: the first, a mental case, who ignited her clothes with a match; the second, a child of two years, who fell in a container of scalding water, death probably being caused by a hemorrhage; the third, a woman who had a burn involving more than three-fourths of her body, due to the explosion of a gasoline stove. The other results were all favorable.

The remedial agents and the number of cases on which they were used are given in the following tables.

TABLE I.—MEDICATIONS USED LOCALLY

Medication	Number of Cases
Acriflavine	1
Aluminum acetate solution	1
Amertan	11
Boric acid	10
Butesin picrate	11

* Saint Louis University Hospitals, Saint Louis, Missouri.

Presented before the Subsection on Hospital Pharmacy A. PH. A., Denver meeting, 1942.

Cod liver oil	2
Dakin's solution	1
Foille	3
Gentian violet	2
Hydrogen peroxide solution	3
Liquid petrolatum	1
Magnesium sulfate	1
Nupercain	2
Petrolatum	1
Scarlet red	1
Silver nitrate	9
Sodium chloride	10
Sulfathiazole	1
Tannic acid	16
Thymolidine	1
Urea	1
Xeroform ointment	2
Zinc Oxide ointment	2

From the number of cases given in Table I, it is readily seen that often two or more agents were used on the same patient; for instance, tannic acid and silver nitrate were often used together; again, boric acid packs, saline packs, and sulfathiazole powder were used on the same patient.

TABLE II.—OTHER REMEDIES USED LOCALLY

Remedial Agent	Number of Cases
Whirlpool bath	1
Plaster cast	1
Dry heat	16

Besides various stimulants and sedatives, the following systemic agents were used.

TABLE III.—SYSTEMIC MEDICATIONS

Medication	Number of Cases
Adrenal Cortex	3
Blood transfusions	6
Blood plasma	2
Cyclopropane	2
Gas gangrene antitoxin	6
Intravenous fluids	8
Neoprontosil	1
Oxygen	1
Tetanus antitoxin	16

For local treatment of the eyes, atropine in castor oil, boric acid ointment, and Neosilvol solution were used.

This study seems to indicate that, although a variety of agents are used, the tannic acid coagulation treatment is still the method of choice. It is important to remember that aqueous tannic acid solutions must be freshly prepared; on standing, the tannic acid is hydrolyzed to gallic acid, and this would not produce the desired effect.[3]

Due to the number of practitioners and their diversified opinions of treatment, it is difficult to arrive at any definite conclusions regarding the effectiveness of the agents used; moreover, burns do not lend themselves easily to statistical study. It is practically impossible to compare burns accurately as to the surface involved, and their depth may be a matter of conjecture by the most experienced observer.[4]

The established principles governing the treatment of burns are recognized as being an aim, first, to save life; second, to avoid infection; third, to prevent deformity.[5] Again, in dealing with patients suffering from burns, several factors are to be taken into consideration: the extent of the burn, its depth, surface area, and its location; the secondary shock, which is frequently the principal factor, usually resulting in death if the latest approved constitutional therapeutic measures are not instituted early; toxemia, which is the result of the absorption of certain tissue toxins and also bacterial toxins from secondary infections.[6]

OTHER PROPOSED METHODS OF TREATMENT

After studying 968 burn cases treated by different methods in Cook County Hospital, Meyer and Wilkey concluded that the Bettman tannic acid-silver nitrate treatment is the local therapy of choice in uncontaminated or noninfected severe burns not more than twelve hours old. After infection is imminent, they consider the aniline dye treatment better. However, they believe that the general treatment of initial shock, in addition to good nursing care, should take precedence over local therapy.[7]

For local treatment of extensive burns in the hospital the coördinating team on burns appointed by the War Wounds Committee of the Medical Research Council, Great Britain recommends the following:[8]

Under gas-and-oxygen or pentothal anesthesia, the burn areas should be thoroughly cleansed by gentle but liberal use of soap and water, followed by saline and by the removal of debris under strict aseptic precautions (soft soap should not be used; the best application is some form of soap flakes). No violet scrubbing or scraping should be used, nor should antiseptic solutions or spirit be employed. If the burn area is impregnated with oil or grease, ether soap is of value for cleansing. Extensive burns should never be fully exposed at one time,

owing to the risk of increasing shock by loss of body heat; a limited area only should be exposed for treatment, which should be completed before the next area is dealt with. *Loss of heat is especially marked when ether soap is used.* After the cleansing process has been completed, the burn surface and the skin around should be dried and the burn surface should be lightly dusted with sulfanilamide powder; a coagulant is then applied, except on the face, hands, wrists, and feet.

The coagulant applications suggested are:

1. Silver nitrate solution, 10 percent.
2. Tannic acid solution, 10 percent.
3. Silver nitrate solution, 10 per cent and tannic acid solution, 5 per cent, to be used alternately.
4. "Triple dye," consisting of equal parts of gentian violet solution, 1:400; brilliant green solution, 1:400; with neutral acriflavine solution, 1:1000.

It is recommended to apply the coagulant application by means of a large gauze mop; no dressings are required over the coagulant area, but after the coagulum is dry the part is to be covered with a sterile towel. The edges of the area and any cracks that may develop on the surface are to be dusted daily with sulfanilamide powder. Since coagulants tend to contract on drying, there is risk of dangerous constriction of vessels or distortion of tissues, such as the fingers and eyelids. For this reason, too, circumferential tanning of a limb should be avoided if possible.

For treating burn areas which should not be tanned, it is suggested that, after cleansing the part as described above, the surface should be dried and dusted with sulfanilamide powder. A "tulle gras"* dressing should then be applied, and this in turn should be covered with 6 to 8 layers of sterile gauze wrung out in warm sterile normal saline solution. The gauze must be kept moist constantly with additional sterile normal saline solution dripped on from time to time. The gauze dressings are to be changed every 3 to 4 hours the first few days, and the tulle gras twice daily. Later, the dressings are to be changed according to the progress of the case. Immersing the affected part in a bath or applying a gentle stream of saline greatly assists in removing the tulle gras dressing. Before applying a fresh dressing, the part is dried and again dusted with sulfanilamide powder.

The following are some of the recommendations for the treatment of burns that were adopted at a conference at which the National Research Council, the Army, the Navy, and the Committee on Medical Research were represented.[9] It will be noted that the local treatment is similar to that used by the British.

1. Morphine should be given in adequate doses to relieve pain.
2. Every severely burned patient should receive plasma by the intravenous route. The amount of plasma to be administered should be judged by hematocrit determinations.
3. Clothing should be removed carefully, and the burned surface and the surrounding skin should be carefully cleansed with a recommended detergent.
4. Surfaces are to be debrided under best possible aseptic conditions and with minimal trauma.
5. The surface should then be rinsed with sterile normal saline solution and followed by tanning.

For tanning, a 10 percent tannic acid solution should be applied first. One-half hour later and every half hour for four applications, a mixture of equal parts of 10 percent tannic acid solution and 10 percent silver nitrate solution should be applied by means of a spray. If after this time the tan is not adequate, the spraying should be continued until the objective is achieved. For parts of the body which should not be tanned, such as the face, hands, and so forth, an aqueous emulsion containing 5 percent of sulfadiazine, or boric acid ointment is to be applied to the burned area and covered with a fine mesh gauze. On the hands, the pressure dressing should then be applied.

For chemotherapy of freshly tanned burns, sulfadiazine is considered the drug of choice, in doses of 1 Gm. every 6 hours, night and day for 10 days. If sulfadiazine is not available, however, sulfanilamide or sulfathiazole may be used instead.

Burns more than 24 hours old should not be tanned, but should be treated as infected burns.

* "Tulle gras" may be prepared in the following way: Curtain net with a mesh of 2 mm. is cut into squares of 9 cm.; these are placed in a tin box of slightly larger size and the box filled with a mixture of soft paraffin 96 Gm. and balsam of Peru 2 Gm., sufficient to impregnate and cover the material completely after sterilization by heat in an autoclave.

It has been shown that a reduction of vitamin stores in the body will interfere with normal wound healing. It is recommended that all burned patients receive the following amounts of vitamins daily until recovery is complete.

Vitamin A	5000 I. U.
Thiamin	2 mg.
Ascorbic Acid	75 mg.
Riboflavin	3 mg.
Nicotinic Acid Amide	20 mg.
Vitamin D	400 I. U.

Anyone who has followed the ordinary treatment of burn cases at the present time and has watched their progress will admit that they require a great deal of nursing care in addition to a large amount of dressings. In time of war, a large number of such cases may be admitted to a hospital at one time. With the present shortage of nursing personnel and a limited amount of supplies and equipment, any hospital administrator should welcome a method of treatment which will eliminate, to a certain extent, these disadvantages, provided, of course, that such treatment does not prove detrimental to the patient.

Two methods of treatment have been proposed which may aid in filling our present needs. The first is the closed plaster technique, and the second is the "envelope method."

The closed plaster method has been used by Roulston[10] in treating 16 cases of burns of the extremities with apparent success in the E. M. S. base hospital. In this method, burned areas were cleansed with saline, and the surrounding undamaged skin with soap and water. The affected areas were then covered with two thicknesses of gauze impregnated with petrolatum or mineral oil. Plaster-of-Paris was then applied in an endeavor to obtain absolute immobilization of the affected part. The plasters were changed every 10 to 14 days, depending on the quantity of discharge, and also on the condition of the plaster. In one case, admitted to the hospital 17 hours after injury, no other treatment was used either externally or internally, with the exception of silver nitrate to burn down the occational small granulations, and liquid petrolatum to maintain pliability of the skin after the plasters were removed. The other cases had received treatment elsewhere, and were later brought to the E. M. S. base hospital, at periods varying from 3 to 21 days after injury.

Certain definite advantages of this method have been claimed. Large numbers of burn cases could easily be handled at one time without causing any undue strain on the nursing staff. The oft repeated changing of dressings was eliminated. Toxemia was reduced to a minimum as evidenced by a speedy return of temperature and pulse to normal. The patients could be moved about freely in bed without causing pain. With the relief of pain and toxemia there was rapid improvement in the general condition, appetite and sleep. Flexibility of joints was maintained, and contractures were prevented.

The treatment of burns by envelope irrigation [11,12] introduced by Bunjan (1940) was used in the London Hospital in treating 16 cases.

The principle of this method consists in enclosing the affected part in a transparent coated silk envelope, irrigating with electrolytic sodium hypochlorite solution three times daily through vents provided, and using the envelope as the only dressing between irrigations.

Several advantages are claimed for this method: first, much time is saved for the nursing staff if several cases are treated by the envelope technique; one preparation does for all, and there need be no scrubbing up between cases; while the fluid is being moved over the lesions of one patient, the envelope for the next is being filled. Secondly, when thorough surgical technique is impossible, the envelope method minimizes the dangers of infection. Lastly, the method is economical and convenient.

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PREPARATION OF PYROGEN-FREE INULIN SOLUTION

by DON E. FRANCKE and VINCENT L. REES

UNIVERSITY HOSPITAL, UNIVERSITY OF MICHIGAN

RICHARDS in 1934 introduced inulin (a starch-like polymer of fructose) as an inert compound removed from the human body exclusively through renal glomerular filtration. It promptly became of interest to the physiologists because with it they had a means of measuring one of the specific physiological activities occurring in the kidney, namely, glomerular filtration. More recently, it has been utilized clinically to specifically determine the renal changes occurring in various pathological states. By means of inulin clearance studies, an accurate knowledge of glomerular activity can be obtained.

With the advent of the present war, filters essential for the preparation of pyrogen-free solutions of inulin were no longer available and so both experimental and commercial preparations of pyrogen-free inulin were no longer available. Attempts were then made to devise a method of purifying inulin with materials that were available. After several attempts, we were successful in preparing a 10 percent solution of chemically pure inulin that, when administered intravenously, caused no untoward reactions and proved a satisfactory agent for studying renal filtration.

It has been shown that solutions may be rendered pyrogen free by filtration[1, 2] through a double Seitz No. 3 filter pad or by shaking[3] the solution for a few minutes with powdered charcoal and then removing the charcoal by filtration. In each of these methods the pyrogens are adsorbed from the solution.

Both of these methods were tried in an attempt to prepare a pyrogen-free inulin solution. However, since with this particular preparation, neither method was successful, it was decided to try a combination of the two methods. By using the combined method we were able to prepare solutions of pyrogen-free inulin. After preparation all lots were tested for pyrogens, first on dogs, and then if negative, on man.

A sterile nonpyrogenic solution of chemically pure inulin suitable for intravenous use may be prepared as follows:

Inulin, C. P.	10.0%
Sodium chloride, C. P.	0.9%
Water for injection, U. S. P.	89.1%

Heat the recently distilled water to 80° C. dissolve the salt and then the inulin in the water. Transfer the resulting solution to a bottle of suitable size, add 0.1 percent powdered charcoal,* and agitate in a shaking machine for twenty minutes. To remove most of the charcoal, filter by suction through a Büchner funnel fitted with a medium filter paper to which a Kleenex tissue has been added; this latter device greatly facilitates filtration. Immediately after the coarse filtration the solution is passed by means of combined pressure and suction through a Seitz-Uhlenhut-Monteufel filter which has been previously fitted and sterilized with double filter pads.† The resulting solution is then ready to be filled into ampuls and autoclaved at 250° F. for fifteen minutes. After the solution has been autoclaved it is tested for pyrogens.

CONCLUSION

Sterile nonpyrogenic solutions of chemically pure inulin suitable for intravenous injection may be prepared by treating a solution of chemically pure inulin in physiological saline with charcoal and then passing the solution through a Seitz filter fitted with double filter pads.

REFERENCES

* "Nuchar:" Nuchar Laboratories, 230 Park Avenue, New York, N. Y.

† Filter Pad, Serum No. 1, Republic Filters, Inc., Paterson, N. J.

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CONCENTRATED SULFUR PASTES

STRENGTHS OF THIRTY TO FIFTY PERCENT USED BY NEW YORK DERMATOLOGIST IN TREATING CERTAIN ACUTE AND RESISTANT DERMATOSES

ALTHOUGH dermatologists have studiously avoided the use of sulfur in the treatment of acute inflammatory skin conditions, preferring bland, soothing medication, Dr. E. William Abramowitz, of New York City, uses highly concentrated, 30 to 50 percent, sulfur paste in severe or highly resistant cases of pityriasis rosea, eczematous dermatitis including acute types of infantile eczema, certain types of seborrheic dermatitis, psoriasis, rosacea, and scabies with exceptional results. Dr. Abramowitz, who is a senior member of the staff of the Skin and Cancer Unit of the New York Post-Graduate School and Hospital, Columbia University, described his work in a paper read at the annual meeting of the Medical Society of the State of New York last year, and published in the Society's *New York State Journal of Medicine* for April 15, 1943 (43:8, 746–753).

The sulfur paste is made with either white or yellow petrolatum. A 50 percent paste is frequently too thick to apply and is used only in cases which do not respond to the 30 or 40 percent strengths. The 30 percent paste is most commonly used by the author, except in warm weather when the 40 percent product is preferred. Dr. Abramowitz has tried highly concentrated aqueous suspensions of sulfur, using glycerin, tragacanth, bentonite, or methyl cellulose with equally good results, but more frequent applications are necessary.

The paste is spread on the skin thinly with a tongue blade. It is not rubbed in except on the hairy scalp. Applications are changed one or more times a day depending upon the need. The paste is removed with any bland mineral or vegetable oil, followed by a soap or linit bath.

Dr. Abramowitz uses the concentrated pastes only in severe and obstinate cases which do not respond to ordinary treatment.

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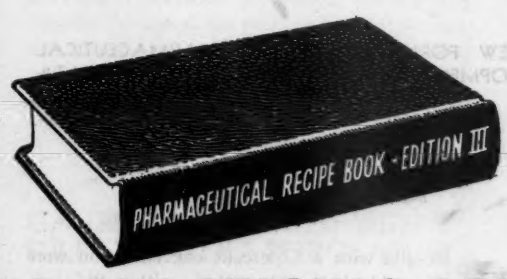

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A QUICK-DRYING CALAMINE LOTION

The substitution of acetone for 25 percent of the lime water in Calamine Lotion, N. F., produces a mixture that is cooling and soothing to irritated skin and dries much more rapidly than the regular calamine lotion, according to Lloyd L. Boughton, of the University of Kansas (*Bull. N. F., 11: 3–4 (March–April, 1943) 66*). Acetone is a critical material during the war emergency, but this suggestion is one which pharmacists might well file for consideration after conditions return to normal. A calamine lotion which dries more rapidly would be of advantage, particularly in its application on children who find it difficult to stand still for the period it takes for the ordinary lotion to dry.

SULFATHIAZOLE IN IMPETIGO

Treating 120 cases of impetigo with sulfathiazole ointment and paste, Drs. Peterkin and Jones, of the English Army, obtained 77 percent cures in an average length of time of 6.8 days, as compared to the average of 14.6 days required to cure the disease by previous routine treatments. Of the 27 cases that were not cured, 17 were treated with a 2½ percent cream, which evidently was too low a concentration of the drug.

The two dermatologists used ointments made with a water-miscible base and pastes made with 15 percent zinc oxide and 15 percent starch. The vehicle made little difference in the effectiveness of the treatment.

Results with a 5 percent concentration were considerably better than those with a 2½ percent product, but increasing the concentration to 10 percent did not add appreciably to the effectiveness of the preparation. The 2½ percent ointment seemed to clear up the streptococcic lesions, but did not affect the staphylococcic infections.

Brit. Med. Jour., March 13, 1943, 318–320

A NON-FILTERED ANTISEPTIC SOLUTION

The N. F. monograph for preparing Antiseptic Solution directs that the solution be chilled to 10° C. and filtered in order that the resulting product be clear. Lloyd L. Boughton, of the University of Kansas, believes it is desirable to have a formula which does not require chilling and filtering, and he suggests that the reason this clarification process is necessary in the case of the N. F. solution is the fact that it contains an excess of volatile oils and volatile oil principles. To remedy this situation, he suggests that the amounts of thymol, menthol, and methyl salicylate be decreased and that the following formula be used:

Boric acid	25.0 Gm.
Thymol	0.4 Gm.
Chlorthymol	0.5 Gm.
Menthol	0.1 Gm.
Eucalyptol	0.1 Gm.
Methyl salicylate	0.1 Gm.
Oil of thyme	0.01 cc.
Alcohol	300.00 cc.
Water, *q. s.*	1000.00 cc.

Dr. Boughton states that the proposed formula satisfies all of the requirements of the N. F. monograph, including the test for antiseptic value. The solution is clear at 10° C. and therefore requires no filtering. Such a formula, which does not need to be chilled and filtered, would greatly simplify the task of the retail or hospital pharmacist who makes up Liquor Antisepticus in large quantities.

Bull. N. F., 11: 3–4 (March–April 1943) 63–65

GAUZE IMPREGNATED WITH SULFATHIAZOLE-PETROLATUM

The use of gauze strips impregnated with petrolatum on operative incisions, before dressings are applied, is an accepted surgical procedure. Wishing to contribute greater security to postoperative areas, Dr. Voight Mooney, of the Allegheny General Hospital, Pittsburgh, Pa., studied the advisability of adding sulfathiazole to the petrolatum. He planted 2-inch gauze strips in a pan of 5 per cent sulfathiazole-petrolatum ointment. The pan is sterilized in an autoclave for 45 minutes and 20 pounds pressure.

With the sulfathiazole gauze, incisions heal faster and stitch abscesses are virtually unknown. The gauze has also been used successfully as a packing in the treatment of osteomyelitis.

Studies conducted by Dr. F. A. Taylor indicate that there is no evidence of decomposition of the sulfathiazole during sterilization.

Amer. Jour. of Surg., 59:43, 55

PHENOTHIAZINE FOR CATTLE LICE CONTROL

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against sucking and chewing types of cattle lice. For sucking types of lice, the drug is diluted with an equal amount of white flour and dusted on the animal, but this mixture failed to kill the chewing types. A mixture of 2 parts of sodium fluosilicate, 1 part of phenothiazine, and 1 part of white flour killed both the sucking and chewing types. In view of the limited supplies of rotenone and pyrethrin, the phenothiazine dusting mixture meets a real need.

Phenothiazine is official in the Seventh Edition of the National Formulary.

Science, 97: 2520 (Apr. 16, 1943) 354

BEES HATE CHLOROFORM

Bees detest the odor of chloroform above all things, according to H. P. Pickerill, of Wellington, New Zealand, and a small quantity added to an ordinary insect repellent spray will cause the average bee to depart hurriedly. For very persistent swarms of bees it is necessary to add one-third chloroform to the spray. Mr. Pickerill, who has had considerable experience with bees in Rhodesia, where they are particularly vicious, states that half a dozen puffs of a 30 percent chloroform spray ridded his cottage of a swarm of bees which had resisted ordinary means of expulsion, and the bees never returned.

The author states that most insects have a similar hatred of chloroform and he has found the best prophylactic against sandfly and mosquito bites is a mixture of equal parts of kerosene, oil of eucalyptus and chloroform. The mixture is smeared over all exposed skin and it will keep the bare arms and neck free from sandflies for several hours.

Brit. Med. Jour., 4292 (Apr. 10, 1943), 462

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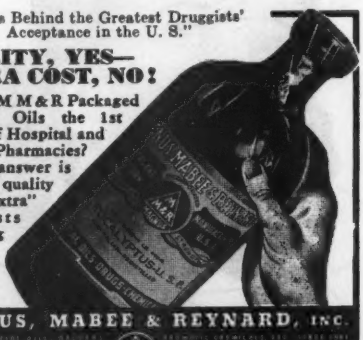

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SUGARLESS ELIXIR OF TERPIN HYDRATE

To conserve sugar, Earny B. McClellan, pharmacist of the Veterans' Administration Facility, Livermore, Calif., has developed the following modified formula for an elixir of terpin hydrate.

Tincture sweet orange peel	20.0 cc.
Spt. bitter almond	5.0 cc.
Alcohol	405.0 cc.
Glycerin	300.0 cc.
Gelatin	1.0 Gm.
Soluble saccharin	0.4 Gm.
Distilled water, *q. s.*	1000. cc.

LUBRICATING JELLY

Mr. McClellan has also developed a lubricating jelly which, in view of the shortage of metal tubes, is placed in 2-ounce ointment jars. The formula is as follows:

Tragacanth	35.0 Gm.
Boric acid	15.0 Gm.
Benzoic acid	0.5 Gm.
Sol. formaldehyde	3.0 cc.
Methyl salicylate	0.4 cc.
Alcohol	120.0 cc.
Distilled water, *q. s.*	1000. cc.

Med. Bull. of Vet. Adm., 19:3 (Jan., 1943), 323

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